

				165					170					175	
Gly	Thr	His	Lys	Phe	Thr	Phe	Tyr	Val	Gly	Asn	Arg	Cys	Glu	Ile	Glu
			180					185					190		
Val	Ile	Ala	Phe	Cys	Ser	Tyr	Leu	Arg	Trp	Ala	Val	Tyr	Gln	Tyr	His
		195					200					205			
Ser	Ile	Pro	Phe	Glu	Val	Ile	Trp	Ser	Val	Thr	Ala	Val	Leu	Ile	Ile
	210					215					220				
Ile	Leu	Cys	Ser	Trp	Tyr	Leu	Ile	Lys	Lys	Tyr	Ile	Ser	Lys	Ile	Arg
225					230					235					240
Asn	Asp	Lys	Lys	His	Leu	Ala	Asn	Asp	Arg	Asp	Arg	Glu	Arg	Lys	Val
				245					250					255	
Arg	Ile	Gln	Leu	Glu	Lys	Asp	Gln	Lys	Arg	Leu	Glu	Val	Lys	Gln	Lys
		260						265					270		
Glu	Tyr	Glu	Lys	Arg	Ile	Lys	Asp	Phe	Ser	Ala	Lys	Gly	Glu	Glu	Tyr
	275						280					285			
Glu	Glu	Glu	Arg	Lys	Ser	Met	Glu	Lys	Ile	Leu	Lys	Glu	Tyr	Glu	Asn
	290					295					300				
Gln	Ile	Gln	Lys	Leu	Lys	Glu	Leu	Arg	Glu	Ser	Gly	Lys	Glu	Pro	Leu
305					310						315				320
Leu	Tyr	Arg	Leu	Ser	Pro	Lys	Val	Thr	Phe	Asp	Ser	Tyr	Ala	Lys	Val
				325					330					335	
Leu	Ile	Cys	Ser	Asp	Gln	Thr	Ile	Ser	Leu	Thr	Ser	Gln	Ala	Cys	Gln
		340						345					350		
Leu	Leu	Asp	Ala	Phe	Leu	Asn	Ala	Ser	Glu	Tyr	Ile	Leu	Thr	Tyr	Glu
		355					360					365			
Glu	Leu	Leu	Arg	Tyr	Leu	Trp	Glu	Asp	Gly	Thr	Gly	Asp	Met	Ile	Arg
	370					375					380				
Leu	Arg	Val	Ala	Ile	Ser	Arg	Leu	Arg	Val	Ala	Leu	Ser	Ile	Asp	Pro
385					390					395					400
Glu	Asn	Phe	Tyr	Phe	Ser	Glu	Gly	Tyr							
				405											

<210> 6359  
 <211> 376  
 <212> PRT  
 <213> B.fragilis

<400> 6359

Ser	Asn	Lys	Val	Met	Lys	Asn	Ile	Ser	Leu	Ile	Leu	Leu	Leu	Phe	Ile
1				5					10					15	
Leu	Phe	Ser	Cys	Lys	Ser	Thr	Gly	Asp	Lys	Thr	Asp	Cys	Glu	Val	Leu
			20					25					30		
His	Val	Asp	Leu	Val	Glu	Arg	Pro	Val	Pro	Thr	Glu	Glu	Leu	Phe	Ser
		35					40					45			
Lys	Ile	Ser	Val	Ile	Pro	Leu	Glu	Thr	Asn	Asp	Ser	Ser	Phe	Leu	Val
	50					55				60					
Gly	Pro	Val	Lys	Val	Ile	Ile	Lys	Asp	Asn	Arg	Tyr	Tyr	Ile	Val	Asp
65					70					75				80	
Glu	Gly	Val	Pro	Ala	Val	Phe	Ser	Phe	Asp	Glu	Glu	Gly	His	Leu	Leu
				85					90					95	
His	Lys	Ile	Gly	Lys	Lys	Gly	Gln	Gly	Pro	Gly	Glu	Tyr	Arg	Glu	Ile
		100						105					110		
Tyr	Asp	Ala	Val	Ile	Lys	Glu	Lys	Glu	Asn	Ala	Val	Tyr	Met	Leu	Ser
	115					120						125			
Pro	Phe	Gly	Ser	Leu	Tyr	Val	Tyr	Ser	Leu	Asp	Gly	Lys	Phe	Ile	Lys
	130					135					140				
Glu	Ile	Lys	Leu	Pro	Thr	Arg	Ala	Asn	Tyr	Gln	Leu	Ile	Glu	Glu	Leu
145					150					155					160
Glu	Ser	Lys	Tyr	Phe	Val	Thr	Trp	Thr	Leu	Pro	Ala	Ser	Glu	Asn	Asp

[illegible]

<400> 6360

<400> 6361

Val	Met	Lys	Val	Tyr	Leu	Gly	Leu	Gly	Thr	Asn	Leu	Gly	Asp	Lys	Glu
1				5					10					15	
Leu	Asn	Leu	Arg	Val	Ala	Leu	Gln	Lys	Ile	Glu	Glu	Arg	Ile	Gly	Lys
			20					25					30		
Ile	Ile	Ser	Leu	Ser	Ala	Phe	Tyr	Ala	Thr	Ala	Pro	Trp	Gly	Phe	Gln
		35					40					45			
Ser	Glu	Asn	Asn	Phe	Leu	Asn	Ala	Ala	Val	Gly	Val	Glu	Thr	Val	Leu
	50					55					60				

Ser Pro Val Gly Ile Leu Glu Ser Thr Gln Arg Ile Glu Gln Glu Ile  
65 70 75 80  
Gly Arg Leu His Lys Ser Arg Asp Gly Val Tyr Ser Asp Arg Leu Ile  
85 90 95  
Asp Ile Asp Leu Leu Tyr Gly Asp Lys Ile Leu Gln Asp Glu Arg  
100 105 110  
Leu Ile Val Pro His Pro Leu Met Thr Asp Arg Lys Phe Val Leu Glu  
115 120 125  
Pro Leu Ala Glu Ile Ala Gln Asp Val Val His Pro Val Phe His Lys  
130 135 140  
Thr Ile Lys Glu Leu Phe Leu Ala Leu Ser  
145 150

<210> 6362

<211> 311

<212> PRT

<213> B.fragilis

<400> 6362

Arg Phe Gly Val His Leu Asn Met Gln Ile Lys Pro Met Asn Lys Leu  
1 5 10 15  
Thr Ile Asn Ala Cys Pro Leu Cys Gly Gly Ala His Leu Lys Arg Ala  
20 25 30  
Met Thr Cys Thr Asp Phe Tyr Ala Ser Gly Glu Gln Phe Asp Leu Tyr  
35 40 45  
Thr Cys Glu Asp Cys Gly Phe Thr Phe Thr Gln Gly Val Pro Val Glu  
50 55 60  
Ala Glu Ile Gly Arg Tyr Tyr Glu Thr Pro Asp Tyr Ile Ser His Ser  
65 70 75 80  
Asp Thr Lys Lys Gly Ala Met Asn Ala Ile Tyr His His Val Arg Gln  
85 90 95  
Tyr Met Leu Gly Arg Lys Ala Arg Leu Val Met Lys Glu Ser His Arg  
100 105 110  
Lys Thr Gly Arg Ile Leu Asp Ile Gly Thr Gly Thr Gly Tyr Phe Ala  
115 120 125  
His Thr Met Gln Asn Arg Gly Trp Glu Val Glu Ala Val Glu Lys Ser  
130 135 140  
Gly Gln Ala Arg Asn Phe Ala Arg Glu His Phe Gly Leu Asn Val Arg  
145 150 155 160  
Pro Glu Ala Ala Leu Lys Glu Leu Val Pro Gly Thr Phe Asp Val Ile  
165 170 175  
Thr Leu Trp His Val Met Glu His Leu Glu His Leu Asp Glu Thr Trp  
180 185 190  
Glu Leu Leu Arg Glu Leu Leu Thr Glu Lys Gly Val Leu Ile Val Ala  
195 200 205  
Val Pro Asn Cys Ser Ser Tyr Asp Ala Met Lys Tyr Gly Lys Tyr Trp  
210 215 220  
Ala Ala Tyr Asp Val Pro Arg His Leu Trp His Phe Thr Pro Ala Thr  
225 230 235 240  
Ile Gln Gln Phe Gly Ser Lys His Gly Phe Ile Leu Ala Ala Arg His  
245 250 255  
Pro Met Pro Phe Asp Ala Phe Tyr Val Ser Met Leu Thr Glu Lys His  
260 265 270  
Lys Gly Ser Ala Tyr Ser Phe Val Lys Gly Met Trp Thr Gly Thr Val  
275 280 285  
Ala Trp Leu Ser Ala Gln Ala Lys Lys Glu Arg Ser Ser Ser Met Ile  
290 295 300  
Tyr Val Phe Arg Lys Lys Arg  
305 310

<210> 6363  
 <211> 77  
 <212> PRT  
 <213> B.fragilis

<400> 6363

Trp	Val	Met	Ser	Val	Phe	Cys	Leu	Gln	Glu	Thr	Cys	Phe	Leu	Gln	Thr
1				5					10					15	
Lys	Asp	Tyr	Met	Asp	Asn	Ser	Ser	Lys	Gln	Asn	Ile	His	Arg	Glu	Lys
			20					25					30		
His	Leu	Val	Phe	Ser	Phe	Thr	His	Arg	Tyr	Ile	Leu	Asn	Ile	Thr	Phe
		35				40						45			
Gly	Arg	His	Pro	Leu	Gly	Ser	Thr	Val	Ile	Pro	Asp	Thr	Leu	Lys	Ala
	50					55					60				
Tyr	Thr	Asp	Ile	Met	Ser	Ala	Ile	Gln	Thr	Arg	His	Ile			
65					70					75					

<210> 6364  
 <211> 110  
 <212> PRT  
 <213> B.fragilis

<400> 6364

Asn	Lys	Asn	Thr	Met	Tyr	Thr	Ile	Gln	Ala	Asn	Pro	Ser	Gly	Thr	Arg
1				5					10					15	
Ser	Met	Glu	Ile	Ser	Glu	Glu	Asn	Leu	Val	Thr	Ile	Glu	Lys	Tyr	Ser
			20				25						30		
Leu	Phe	Gln	His	Leu	Ile	Asp	Ser	Asn	Gly	Ile	Val	Asp	Glu	Ala	Val
		35				40						45			
Leu	Glu	Lys	Leu	Lys	Leu	Asn	Ile	Arg	Ser	Leu	Ile	Ala	Ser	Gln	Glu
	50					55					60				
Glu	Asp	Ser	Lys	Asp	Leu	Leu	Asp	Leu	Cys	Ile	Asp	Val	Ile	Tyr	His
65				70					75					80	
Asn	Asn	Met	Lys	Ala	Phe	Gly	Leu	Gln	Gln	Leu	Ile	Lys	Leu	Tyr	Leu
			85					90						95	
Thr	Trp	Leu	Ser	Lys	Gln	Glu	Ala	Glu	Glu	Glu	Glu	Glu	Ala		
		100						105					110		

<210> 6365  
 <211> 150  
 <212> PRT  
 <213> B.fragilis

<400> 6365

Ser	Phe	Val	Ala	Tyr	Tyr	Met	Asn	Gln	Phe	Tyr	Ile	Ile	Met	Lys	Ala
1				5					10					15	
Lys	Met	Phe	Phe	Leu	Val	Val	Ala	Met	Leu	Leu	Cys	Arg	Gly	Val	Ala
			20					25					30		
Tyr	Ala	Tyr	Ser	Pro	Ser	Ala	Asn	Asp	Pro	Ile	Ser	Lys	Ser	Gly	Gly
		35				40						45			
Ile	Glu	Gln	Asp	Ile	Pro	Pro	His	Ile	Pro	Pro	Pro	Pro	Pro	Leu	Pro
	50					55					60				
Ser	Gln	Ile	Phe	Leu	His	Val	Gly	Glu	Ile	Ser	Glu	Thr	Pro	Tyr	Pro
65				70					75					80	
Met	Ile	Gly	Ala	Met	Val	Trp	Glu	Cys	Asp	Asn	Pro	Pro	Val	Gly	Ile
			85					90						95	
Glu	Gln	Glu	Glu	Ser	Tyr	Ile	Phe	Gly	Thr	Met	Ile	Ile	Leu	Arg	Ile
			100					105					110		



Lys Gly Val Ala Ala Gly Arg Tyr Gln Val Asp Met Lys Trp Tyr Asn  
 115 120 125  
 Pro Leu Asn Pro Gly Gln Pro Pro Leu Gly Arg Gln Thr Ile Glu Val  
 130 135 140  
 Ile Val Gln Pro Trp Pro  
 145 150

<210> 6366  
 <211> 149  
 <212> PRT  
 <213> B.fragilis

<400> 6366  
 Gly Val Ala Leu Pro Cys Gly Trp Leu His Pro Ile Ser Val Pro Ser  
 1 5 10 15  
 Gln Thr Thr Gly Gln Pro Asp Arg Gln Ser Thr Asp Leu Phe Asn Tyr  
 20 25 30  
 Phe Lys Phe Ile Thr Gln Asn Gln Arg Lys Ser Leu Ser Leu Pro Lys  
 35 40 45  
 Ile Phe Ser Ile Tyr Ser His Lys Thr Phe Gly Ile Met Ala Lys Arg  
 50 55 60  
 Arg Glu Leu Lys Lys Asn Val Asn Tyr Ile Ala Gly Glu Leu Phe Ser  
 65 70 75 80  
 Glu Cys Leu Ile Asn Ser Lys Phe Ile Pro Gly Thr Asp Lys Lys Lys  
 85 90 95  
 Ala Asp Glu Leu Met Val Glu Ile Met Lys Met Gln Asp Glu Phe Ile  
 100 105 110  
 Ser Arg Ile Ser His Thr Glu Pro Gly Asn Val Lys Gly Phe Tyr Lys  
 115 120 125  
 Lys Phe Arg Ser Asp Phe Asn Ala Lys Val Asn Glu Ile Ile Asp Ala  
 130 135 140  
 Ile Ala Lys Leu Asn  
 145

<210> 6367  
 <211> 746  
 <212> PRT  
 <213> B.fragilis

<400> 6367  
 Ile Cys Ser Asn Ile His Asn Asn Thr Ile Met Lys Lys His Leu Ser  
 1 5 10 15  
 Leu Ile Leu Val Leu Leu Pro Val Leu Phe Leu Ala Leu Pro Ala Leu  
 20 25 30  
 Ala Gln Glu Arg Lys Lys Val Gly Val Val Leu Ser Gly Gly Gly Ala  
 35 40 45  
 Lys Gly Val Ala His Ile Gln Ala Leu Lys Val Ile Glu Glu Ala Gly  
 50 55 60  
 Ile Pro Ile Asp Tyr Ile Val Gly Thr Ser Met Gly Ser Ile Ile Gly  
 65 70 75 80  
 Gly Leu Tyr Ser Ile Gly Tyr Thr Pro Gln Gln Leu Asp Ser Met Val  
 85 90 95  
 Arg Lys Gln Asp Trp Met Phe Leu Leu Ser Asp Arg Val Lys Arg Ser  
 100 105 110  
 Ala Met Ser Leu Asn Glu Arg Glu Lys Ser Glu Lys Tyr Val Phe Ser  
 115 120 125  
 Phe Pro Phe Thr Lys Ser Pro Lys Asp Ala Val Ser Gly Gly Ile Ile  
 130 135 140  
 Lys Gly Gln Asn Leu Ala Asn Leu Phe Thr Glu Leu Thr Val Gly Tyr

145	150	155	160
His Asp Ser Val	Asp Phe Asn Lys Leu	Pro Ile Pro Phe Ala Cys Val	
	165	170	175
Ser Gln Asn Ile Val	Asn Gly Glu Gln Ile Val	Phe His Asn Gly Ile	
	180	185	190
Leu Ala Thr Ala Met Arg Ala	Ser Met Ala Ile Pro Gly Val Phe Thr		
	195	200	205
Pro Val Arg Lys Asp Ser Met	Ile Leu Ile Asp Gly Gly Met Ile Asn		
	210	215	220
Asn Tyr Pro Val Asp Val Ala Arg Ser Met	Gly Ala Asp Ile Ile Ile		
	225	230	235
Gly Val Asp Val Gln Asn Asn Leu Lys Gly	Ile Asp Lys Leu Asn Ser		
	245	250	255
Ala Pro Asp Ile Leu Ser Gln Ile Ile Asp	Leu Thr Thr Lys Asn Asn		
	260	265	270
His Gln Ser Asn Val Gly Leu Thr Asp Thr Tyr	Ile Lys Val Asn Val		
	275	280	285
Glu Gly Tyr Ser Ser Ala Ser Phe Thr Pro Ala	Ala Ile Asp Ser Leu		
	290	295	300
Met His Arg Gly Glu Val Ala Ala Arg Lys Gln	Trp Ala Ser Leu Leu		
	305	310	315
Ala Leu Lys Lys Lys Ile Gly Ile Ala Asp Thr	Phe Val Pro Gln Ser		
	325	330	335
His Gly Pro Tyr Thr Met Phe Ser Lys Asp Arg Thr	Leu His Val Lys		
	340	345	350
Glu Ile Thr Phe Ser Asp Val Glu Glu Asn Asp Lys	Lys Trp Leu Met		
	355	360	365
Lys Lys Cys Lys Leu Gln Glu Asn Ser Arg Ile Ser	Met Arg Gln Ile		
	370	375	380
Glu Gln Ala Leu Phe Ile Leu Arg Gly Asn Gln Ser Tyr	Ser Asn Ala		
	385	390	395
Ser Tyr Thr Leu Thr Asp Thr Pro Glu Gly Tyr Lys	Leu Asn Phe Leu		
	405	410	415
Leu Glu Lys Lys Tyr Glu Lys Thr Ile Asn Val Gly	Ile Arg Phe Asp		
	420	425	430
Ser Glu Glu Ile Ala Ser Leu Leu Ile Asn Ala Thr	Ala Gln Leu Lys		
	435	440	445
Thr His Ile Pro Ser Lys Val Ser Val Thr Gly Arg	Leu Gly Lys Arg		
	450	455	460
Tyr Met Ala Arg Val Asp Tyr Thr Leu Glu Pro Met	Gln Gln Arg Asn		
	465	470	475
Val Asn Phe Ser Tyr Met Phe Gln Tyr Asn Asp Ile	Asn Ile Tyr Asp		
	485	490	495
His Gly Asp Arg Ala Tyr Asn Thr Thr Tyr Lys Tyr	His Ser Gly Glu		
	500	505	510
Phe Gly Phe Ser Asp Val Trp Tyr Lys Asn Phe Arg	Phe Gly Phe Gly		
	515	520	525
Ala Arg Ile Glu Tyr Phe Lys Tyr Lys Asp Phe Leu	Phe Lys Lys Pro		
	530	535	540
Glu Phe Thr Met Asn Val Asn Ser Glu Tyr Phe Ile	Ser Tyr Phe Ala		
	545	550	555
Gln Leu Arg Tyr Asn Thr Phe Asp Lys Gly Tyr Phe	Pro Ser Lys Gly		
	565	570	575
Ser Asn Phe Ser Gly Ala Tyr Ser Leu Tyr Thr Asp	Asn Phe Ala Arg		
	580	585	590
Tyr Asn Gly His Ala Pro Phe Ser Ala Leu Ser Ala	Ser Trp Glu Ser		
	595	600	605
Val Phe Ser Ile Ser Asn Arg Leu Thr Leu Ile Pro	Ala Leu Tyr Gly		
	610	615	620

Arg Val Leu Ile Gly Gln Glu Ile Pro Tyr Ala Tyr Glu Asn Ala Leu  
 625 630 635 640  
 Gly Gly Asp Val Phe Gly Arg Tyr Leu Pro Gln Gln Leu Pro Phe Ala  
 645 650 655  
 Gly Ile Tyr Asn Ile Glu Leu Thr His Asn Ser Val Ala Val Ala Ser  
 660 665 670  
 Leu Lys Leu Arg Gln Arg Met Gly Ser Lys His Tyr Ile Thr Leu Ala  
 675 680 685  
 Gly Asn Phe Ala Leu Ser Asp Asn Phe Phe Lys Ile Leu Lys Gly  
 690 695 700  
 Asn Arg Ile Tyr Gly Cys Ser Ile Gly Tyr Gly Leu Asp Ser Met Phe  
 705 710 715 720  
 Gly Pro Leu Glu Ala Ser Leu Gly Tyr Ser Asn Gln Ser Lys Asp Val  
 725 730 735  
 Gly Phe Tyr Val Asn Leu Gly Phe Ser Phe  
 740 745

<210> 6368  
 <211> 1023  
 <212> PRT  
 <213> B.fragilis

<400> 6368

Leu Pro Glu Lys Ser Ile Gly Ser Arg Tyr Pro Gln Ile Glu Asn Ala  
 1 5 10 15  
 Val Tyr Arg Ile Asn Gly Gln Leu Ala Thr Ser Ser Ala Asn Asp Leu  
 20 25 30  
 Ser Ala Ile Ala Gly Phe Ser Phe Ile Ser Ser Thr Phe Ala Pro Asp  
 35 40 45  
 Asn His Ser Thr Glu His Met Lys Lys Leu Cys Ile Phe Leu Leu Leu  
 50 55 60  
 Leu Phe Ala Ala Thr Gly Ile Leu Phe Ala Gln Glu Ile Glu Lys Ser  
 65 70 75 80  
 Val Lys Glu Arg Leu Ser Asn Tyr Phe Glu Thr Tyr Thr Pro Ala Ser  
 85 90 95  
 Ala Asn Thr Gly Ser Cys Lys Leu Lys Ser Val Asp Ile Asp Phe Glu  
 100 105 110  
 Gly Arg Lys Leu Ser Ile Tyr Ala Ser Glu Ser Phe Ala Tyr Gln Pro  
 115 120 125  
 Phe Val Pro Glu Thr Val Asp Glu Ile Tyr His Gln Ile Glu Glu Leu  
 130 135 140  
 Leu Pro Gly Pro Val Arg Phe Phe Arg Thr Thr Ile Tyr Ala Asn Asn  
 145 150 155 160  
 Gln Pro Ile Glu Glu Leu Ile Pro Asn Phe Phe Arg Gly Lys Lys Lys  
 165 170 175  
 Lys Asp Lys Ser Arg Leu Ser Asn Ala Glu Tyr Lys Gly Ala Pro Trp  
 180 185 190  
 Val Ile Asn Thr Ser Arg Pro Tyr Glu Ile Thr Lys Gly Leu Gln Asn  
 195 200 205  
 Arg His Ile Ser Leu Trp Gln Ser His Gly Lys Tyr Tyr Lys Asn Asp  
 210 215 220  
 Lys Gly Glu Trp Gly Trp Gln Arg Pro Arg Leu Phe Cys Thr Thr Glu  
 225 230 235 240  
 Asp Leu Phe Thr Gln Ser Phe Ile Leu Pro Tyr Val Ile Pro Met Leu  
 245 250 255  
 Glu Asn Ala Gly Ala Asn Val Tyr Thr Pro Arg Glu Arg Asp Thr Gln  
 260 265 270  
 Lys Asn Glu Val Ile Val Asp Asn Asp Thr Arg Asn Gly Ser Ile Tyr  
 275 280 285

Leu	Glu	Met	Lys	Ser	Arg	Lys	Ala	Arg	Trp	Glu	Lys	Thr	Asp	Gly	Tyr
290						295				300					
Gly	Phe	Ala	Gln	Arg	Lys	Pro	Val	Tyr	Glu	Asp	Gly	Glu	Asn	Pro	Phe
305					310					315					320
Leu	Thr	Gly	Ser	Ala	Arg	Phe	Thr	Arg	Thr	Glu	Lys	Lys	Lys	Asn	Lys
				325					330					335	
Ala	Phe	Ala	Glu	Trp	Ile	Pro	Thr	Ile	Pro	Glu	Thr	Gly	Ser	Tyr	Ala
			340					345					350		
Val	Tyr	Val	Ser	Tyr	Gln	Thr	Leu	Pro	Asn	Ser	Val	Ser	Asp	Ala	Lys
		355					360					365			
Tyr	Leu	Val	Phe	His	Lys	Gly	Gly	Val	Thr	Glu	Phe	Lys	Val	Asn	Gln
	370					375					380				
Arg	Ile	Gly	Gly	Gly	Thr	Trp	Val	Tyr	Leu	Gly	Thr	Phe	Glu	Phe	Asp
385					390					395					400
Lys	Gly	Ser	Asn	Asp	Tyr	Gly	Met	Val	Val	Leu	Ser	Asn	Glu	Ser	Ser
				405					410					415	
Glu	Asn	Gly	Val	Ile	Cys	Ala	Asp	Ala	Val	Arg	Phe	Gly	Gly	Gly	Met
			420					425					430		
Gly	Asn	Ile	Ser	Arg	Gly	Thr	Val	Ser	Gly	Leu	Pro	Arg	Tyr	Leu	Glu
		435					440					445			
Gly	Ala	Arg	Tyr	Ser	Ala	Gln	Trp	Ala	Gly	Met	Pro	Tyr	Asp	Val	Tyr
	450					455					460				
Gly	Gly	Lys	Gln	Gly	Thr	Asn	Asp	Tyr	Ala	Asp	Asp	Ile	Asn	Ala	Arg
465					470					475					480
Ser	Asn	Thr	Ile	Asn	Tyr	Leu	Ser	Gly	Gly	Ser	Val	Phe	Asn	Pro	Gly
				485					490					495	
Gln	Lys	Gly	Leu	Gly	Val	Pro	Phe	Glu	Met	Asn	Val	Ala	Leu	His	Ser
			500					505					510		
Asp	Ala	Gly	Tyr	Ser	Lys	Thr	Asn	Asp	Ile	Val	Gly	Ser	Leu	Ser	Ile
		515					520					525			
Tyr	Thr	Thr	Asp	Phe	Asn	Asn	Gly	Leu	Leu	Asn	Ser	Gly	Asn	Ser	Arg
	530					535					540				
Tyr	Ala	Ser	Arg	Asp	Leu	Ala	Asp	Leu	Leu	Leu	Thr	Gln	Ile	Gln	Lys
545					550					555					560
Asp	Ile	Arg	Ala	Lys	Phe	Asn	Ile	Gln	Trp	Thr	Arg	Arg	Ser	Met	Trp
				565					570					575	
Asp	Arg	Asn	Tyr	Ser	Glu	Thr	Arg	Leu	Pro	Ala	Ala	Pro	Ser	Thr	Ile
			580					585					590		
Val	Glu	Leu	Leu	Ser	His	Gln	Asn	Phe	Ala	Asp	Met	Lys	Leu	Gly	His
		595				600						605			
Asp	Pro	Asn	Phe	Lys	Phe	Thr	Val	Gly	Arg	Ala	Ile	Tyr	Lys	Ala	Val
	610					615					620				
Leu	Gln	Phe	Ile	Ser	Ser	Gln	His	Asn	Lys	Glu	Tyr	Val	Val	Gln	Pro
625					630					635					640
Leu	Pro	Val	Ser	Asn	Phe	Ala	Ile	Glu	Phe	Gly	Lys	Lys	Arg	Asn	Thr
				645					650					655	
Leu	Glu	Leu	Ser	Trp	Gln	Gly	Glu	Asn	Asp	Pro	Leu	Glu	Pro	Thr	Ala
			660					665					670		
Arg	Pro	Arg	Glu	Tyr	Met	Val	Tyr	Thr	Arg	Ile	Gly	Tyr	Gly	Gly	Phe
		675					680					685			
Asp	Asn	Gly	Val	Arg	Val	Asn	Lys	Pro	Ser	Tyr	Thr	Leu	Lys	Ile	Glu
	690					695					700				
Pro	Gly	Leu	Val	Tyr	Ser	Phe	Lys	Val	Thr	Ala	Val	Asn	His	Gly	Gly
705					710					715					720
Glu	Ser	Phe	Pro	Ser	Glu	Ile	Leu	Ser	Ala	Tyr	Lys	Ala	Lys	Gln	Glu
				725					730					735	
His	Ala	Arg	Val	Leu	Ile	Ile	Asn	Gly	Phe	Asn	Arg	Leu	Ser	Gly	Pro
			740					745					750		
Ala	Val	Ile	Asp	Thr	Pro	Asp	Glu	Ala	Gly	Phe	Asp	Leu	Glu	Gln	Asp

755	760	765
Pro Gly Val Ala Tyr Gln	Tyr Asn Ile Ser Leu Cys Gly Ala Gln Thr	
770	775	780
Gly Phe Asp Arg Ser Gln	Ala Gly Lys Glu Gly Lys Gly Ser Leu Gly	
785	790	795
Tyr Ser Gly Asn Glu Leu	Glu Gly Met Lys Ile Ala Gly Asn Thr Phe	800
	805	810
Asp Tyr Pro Phe Val His	Gly Lys Ala Ile Gln Ala Ala Gly Asn Tyr	815
	820	825
Ser Phe Val Ser Cys Ser	Asp Glu Ala Val Glu Asn Gly Arg Ile Gln	
835	840	845
Pro Glu His Tyr Pro Ile	Val Asp Phe Ile Leu Gly Leu Glu Lys Asp	
850	855	860
Asp Ile Leu Ser Asn Pro	Ala Arg Lys Thr Tyr Tyr Lys Thr Phe Ser	
865	870	875
Ser Pro Met Gln Arg Ile	Leu Thr Ala Tyr Cys Gln Ser Gly Gly Asn	880
	885	890
Leu Leu Val Ser Gly Ser	Tyr Ile Gly Ser Asp Met Ser Asn Ser Gln	895
	900	905
Gly Asn Arg Glu Phe Thr	Glu Lys Ile Leu Lys Tyr Gly Phe Gln Gly	910
915	920	925
Ser Leu Lys Asp Thr Arg	Ser Gly Gln Ile Thr Gly Leu Gly Arg Thr	
930	935	940
Leu Gln Ile Pro Arg Leu	Pro Asn Glu Lys Ala Tyr Ala Val Thr Ala	
945	950	955
Pro Asp Cys Ile Val Pro	Val Asp Ser Ala Phe Pro Val Phe Val Tyr	
	965	970
Gln Pro Gly Gln Tyr Ser	Ala Gly Ile Ala Tyr Lys Gly Asn Tyr Arg	975
	980	985
Val Phe Ala Met Gly Phe	Pro Phe Glu Ser Ile Glu Ser Glu Thr Asp	990
995	1000	1005
Arg Ala Ile Val Met Ala	Ala Ile Leu Lys Phe Phe Gly Glu Lys	
1010	1015	1020

<210> 6369  
 <211> 1025  
 <212> PRT  
 <213> B.fragilis

<400> 6369

Phe Lys Arg Asn Ser Ser Ser	Leu Ser Leu Gly Glu Gly Arg Gly Glu
1	5 10 15
Thr Leu Leu Asn Met Lys Val	Ser Phe Phe Ile Asp Arg Pro Val Phe
	20 25 30
Ser Ile Val Ile Ser Ile Leu	Ile Val Ile Ile Gly Ile Ile Gly Leu
	35 40 45
Thr Met Leu Pro Val Asp Gln	Tyr Pro Gln Ile Thr Pro Pro Val Val
	50 55 60
Lys Ile Ser Ala Ser Tyr Pro	Gly Ala Ser Ala Leu Thr Val Ser Gln
65	70 75 80
Ala Val Ala Thr Pro Ile Glu	Gln Glu Ile Asn Gly Thr Pro Gly Met
	85 90 95
Leu Tyr Met Glu Ser Asn Ser	Ser Asn Ser Gly Gly Phe Ser Ala Thr
	100 105 110
Val Thr Phe Asp Val Ser Ala	Asp Pro Asp Leu Ala Ala Val Glu Ile
	115 120 125
Gln Asn Arg Val Lys Leu Ala	Glu Ser Arg Leu Pro Ala Glu Val Ile
	130 135 140
Gln Asn Gly Ile Ser Val Glu	Lys Gln Ala Pro Ser Gln Leu Met Thr

145	150	155	160
Leu Thr Leu Met Ser Ser Asp Pro Lys Phe Asp Glu Ile Tyr Leu Ser			
	165	170	175
Asn Phe Ala Thr Ile Asn Val Leu Asp Val Ile Arg Arg Ile Pro Gly			
	180	185	190
Val Gly Arg Val Ser Asn Ile Gly Ser Arg Tyr Tyr Ala Met Gln Ile			
	195	200	205
Trp Ala Glu Pro Asp Lys Leu Ala Asn Phe Gly Leu Thr Val Gln Asp			
	210	215	220
Leu Gln Asn Ala Leu Lys Asp Gln Asn Arg Glu Ser Ala Ala Gly Val			
225	230	235	240
Leu Gly Gln Gln Pro Val Lys Gly Leu Asp Val Thr Ile Pro Ile Thr			
	245	250	255
Thr Gln Gly Arg Leu Ser Thr Val Glu Gln Phe Glu Asn Ile Val Ile			
	260	265	270
Arg Ala Asn Thr Asn Gly Ser Ile Ile Arg Leu Arg Asp Val Ala Arg			
	275	280	285
Val Ser Leu Glu Ala Ser Ser Tyr Ser Thr Glu Ser Gly Ile Asn Gly			
	290	295	300
Lys Asn Ala Ala Val Leu Gly Ile Tyr Met Leu Pro Gly Ala Asn Ala			
305	310	315	320
Met Glu Val Ala Lys Ser Val Lys Glu Ala Met Asp Glu Ile Ser Lys			
	325	330	335
Asn Phe Pro Glu Gly Leu Ser Tyr Glu Val Pro Phe Asp Met Thr Thr			
	340	345	350
Tyr Ile Ser Glu Ser Ile His Glu Val Tyr Lys Thr Leu Phe Glu Ala			
	355	360	365
Leu Ile Leu Val Val Leu Val Val Tyr Leu Ser Leu Gln Ser Trp Arg			
	370	375	380
Ala Thr Leu Ile Pro Ile Val Ala Val Pro Ile Ser Leu Ile Gly Thr			
385	390	395	400
Phe Gly Phe Met Leu Ile Phe Gly Phe Ser Leu Asn Ile Leu Thr Leu			
	405	410	415
Leu Gly Leu Ile Leu Ala Ile Gly Ile Val Val Asp Asp Ala Ile Val			
	420	425	430
Val Val Glu Asn Val Glu Arg Ile Met Glu Glu Glu Lys Leu Pro Pro			
	435	440	445
Tyr Glu Ala Thr Lys Lys Ala Met Asn Gly Leu Ala Gly Ala Leu Ile			
	450	455	460
Ala Thr Ser Leu Val Leu Cys Ala Val Phe Val Pro Val Ser Phe Leu			
465	470	475	480
Ser Gly Ile Thr Gly Gln Leu Tyr Arg Gln Phe Thr Ile Thr Ile Ala			
	485	490	495
Val Ser Val Leu Ile Ser Thr Val Val Ala Leu Thr Leu Ser Pro Val			
	500	505	510
Met Cys Ser Leu Ile Leu Lys Pro Asp Asn Gly Lys Lys Lys Asn Ile			
	515	520	525
Val Phe Arg Lys Ile Asn His Trp Leu Asn Val Gly Asn His Lys Tyr			
	530	535	540
Val Ile Ala Ile Arg Arg Val Ile Gly Asn Pro Arg Arg Val Leu Ala			
545	550	555	560
Gly Phe Gly Val Val Leu Ile Gly Ile Leu Leu Ile His Arg Leu Ile			
	565	570	575
Pro Thr Ser Phe Leu Pro Val Glu Asp Gln Gly Tyr Phe Lys Ile Glu			
	580	585	590
Leu Glu Leu Pro Glu Gly Ala Thr Leu Glu Arg Thr Arg Glu Val Thr			
	595	600	605
Asp Arg Ala Ile Thr Tyr Leu Glu Lys Asn Pro Tyr Ile Ala Tyr Val			
610	615	620	

145 150 155 160  
 165 170 175  
 180 185 190  
 195 200 205  
 210 215 220  
 225 230 235 240  
 245 250 255  
 260 265 270  
 275 280 285  
 290 295 300  
 305 310 315 320  
 325 330 335  
 340 345 350  
 355 360 365  
 370 375 380  
 385 390 395 400  
 405 410 415  
 420 425 430  
 435 440 445  
 450 455 460  
 465 470 475 480  
 485 490 495  
 500 505 510  
 515 520 525  
 530 535 540  
 545 550 555 560  
 565 570 575  
 580 585 590  
 595 600 605  
 610 615 620

Gln Asn Val Thr Gly Ser Ser Pro Arg Val Gly Ser Asn Gln Ala Arg  
 625 630 635 640  
 Ser Glu Leu Thr Val Ile Leu Lys Pro Trp Glu Asp Arg Lys Asp Thr  
 645 650 655  
 Ser Ile Asp Glu Ile Met Ser Asn Val Arg His Asp Leu Ser Glu Tyr  
 660 665 670  
 Pro Glu Cys Lys Val Tyr Leu Ser Thr Pro Pro Val Ile Pro Gly Leu  
 675 680 685  
 Gly Thr Ser Gly Gly Phe Glu Met Gln Leu Glu Ala Arg Gly Glu Ala  
 690 695 700  
 Thr Phe Glu Asn Leu Val Gln Ala Ala Asp Thr Leu Met Tyr Tyr Ala  
 705 710 715 720  
 Ser Gln Arg Lys Glu Leu Thr Gly Leu Ser Ser Ser Leu Gln Ser Asp  
 725 730 735  
 Ile Pro Gln Leu Tyr Phe Asp Val Asp Arg Asp Lys Val Lys Met Leu  
 740 745 750  
 Gly Val Pro Leu Ala Asp Val Phe Ser Thr Met Lys Ala Tyr Thr Gly  
 755 760 765  
 Ser Val Tyr Val Asn Asp Phe Asn Met Phe Thr Arg Ile Tyr Lys Val  
 770 775 780  
 Tyr Ile Gln Ala Glu Ala Pro Tyr Arg Asp His Lys Asp Asn Ile Asn  
 785 790 795 800  
 Leu Leu Phe Val Lys Ala Ser Asn Gly Ala Met Ile Pro Leu Thr Ser  
 805 810 815  
 Leu Gly Asn Ala Ser Tyr Thr Thr Gly Pro Gly Ser Ile Lys Arg Phe  
 820 825 830  
 Asn Met Phe Thr Thr Ala Val Phe Arg Gly Glu Ala Ala Gln Gly Tyr  
 835 840 845  
 Ser Ser Gly Gln Ala Met Glu Ile Met Glu Gln Ile Ala Arg Tyr His  
 850 855 860  
 Leu Pro Asp Asn Ile Gly Leu Glu Trp Ser Gly Leu Ser Tyr Gln Glu  
 865 870 875 880  
 Lys Lys Ala Gly Gly Gln Thr Gly Leu Val Leu Ala Leu Val Phe Leu  
 885 890 895  
 Phe Val Phe Leu Phe Leu Ala Ala Gln Tyr Glu Ser Trp Thr Val Pro  
 900 905 910  
 Ile Ala Val Leu Leu Ser Leu Pro Val Ala Ala Leu Gly Ala Tyr Leu  
 915 920 925  
 Gly Val Trp Val Cys Gly Leu Glu Asn Asp Val Tyr Phe Gln Ile Gly  
 930 935 940  
 Leu Val Met Leu Val Gly Leu Ala Ala Lys Asn Ala Ile Leu Ile Val  
 945 950 955 960  
 Glu Phe Ala Lys Val Gln Val Asp Arg Gly Gly Asp Leu Ile Gln Ser  
 965 970 975  
 Ala Ile His Ala Ala Gln Leu Arg Phe Arg Pro Ile Leu Met Thr Ser  
 980 985 990  
 Leu Ala Phe Val Leu Gly Met Leu Pro Met Val Leu Ala Thr Gly Pro  
 995 1000 1005  
 Gly Ser Ala Ser Arg Ala Ala Ile Gly Thr Gly Val Phe Phe Gly Met  
 1010 1015 1020  
 Ile  
 1025

&lt;210&gt; 6370

&lt;211&gt; 258

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6370

Leu Phe Met Lys Ile Ser Ile Val Gln Thr Asp Ile Ile Trp Glu Asn  
 1 5 10 15  
 Lys Gln Glu Asn Leu Arg Leu Leu Arg Glu Lys Leu Ser Pro Leu Arg  
 20 25 30  
 Gly Thr Thr Glu Ile Val Val Leu Pro Glu Met Phe Thr Thr Gly Phe  
 35 40 45  
 Ser Met Asn Ser Arg Leu Leu Ala Glu Pro Val Ser Gly Thr Thr Leu  
 50 55 60  
 Arg Ser Leu Lys Asn Tyr Ala Ile Glu Phe His Leu Ser Leu Ala Gly  
 65 70 75 80  
 Ser Phe Ile Cys Glu Glu Gln Gly Ser Tyr Tyr Asn Arg Ala Phe Leu  
 85 90 95  
 Ile Thr Pro Asp Gly Gln Glu Phe Tyr Tyr Asp Lys Arg His Leu Phe  
 100 105 110  
 Arg Met Gly His Glu Ala Glu His Phe Ser Ala Gly Ser Arg Lys Val  
 115 120 125  
 Ile Ile Pro Tyr Asn Gly Trp Asn Ile Cys Leu Gln Val Cys Tyr Asp  
 130 135 140  
 Leu Arg Phe Pro Val Trp Ser Arg Asn Val Asn Asn Glu Tyr Asp Leu  
 145 150 155 160  
 Leu Ile Tyr Val Ala Ser Trp Pro Thr Pro Arg Ile Gln Ala Trp Asn  
 165 170 175  
 Thr Leu Leu Cys Ala Arg Ala Ile Glu Asn Gln Cys Tyr Val Cys Gly  
 180 185 190  
 Val Asn Arg Ile Gly Gln Asp Gly Asn Gly Leu Cys Tyr Pro Gly Tyr  
 195 200 205  
 Ser Ala Leu Tyr Gly Pro Lys Gly Glu Asn Leu Ala Gly Thr Pro Asp  
 210 215 220  
 Ser Glu Glu Lys Ile Gln Thr Ile Glu Leu Ser Leu Glu Ala Leu Thr  
 225 230 235 240  
 Thr Phe Arg His Lys Phe Pro Cys Trp Lys Asp Ala Asp Pro Phe Leu  
 245 250 255  
 Leu Tyr

<210> 6371  
 <211> 112  
 <212> PRT  
 <213> B.fragilis

<400> 6371  
 Thr Ile Asn Glu Glu Arg Gly Thr Ile Asn Ala Arg Arg Met Gly Asn  
 1 5 10 15  
 Ile Leu Lys Asp Lys Ser Met Ala Phe Ala Ile Gln Ile Val Asn Leu  
 20 25 30  
 His Lys Tyr Pro Asn Lys Arg Lys Ala Tyr Ser Leu Ser Asp Gln Ile  
 35 40 45  
 Leu Ile Ser Gly Thr Ala Ile Gly Val Leu Gln Lys Glu Thr Glu Cys  
 50 55 60  
 Ala Glu Ser Asn Ala Asp Phe Ile His Asn Ile Ala Ser Pro Gln Lys  
 65 70 75 80  
 Asn Val Met Lys Pro Phe Ser Gly Leu Asn Cys Tyr Leu Lys Gln Asn  
 85 90 95  
 Ile Tyr Pro Lys Gln Asn Ile Gln Ala Cys Leu Gln Thr Gln Met Asn  
 100 105 110

<210> 6372  
 <211> 125  
 <212> PRT



&lt;213&gt; B.fragilis

&lt;400&gt; 6372

Trp Arg Thr Asp Asp Phe Thr Val Tyr Tyr Phe Met Ser Glu Ile Gln  
 1 5 10 15  
 Asn Gln Ile Lys Lys Trp Pro Val Thr Ala Ile Lys Lys Ile Lys Ser  
 20 25 30  
 Thr Phe Gly Ser Ala Glu Lys Phe Tyr Ala Thr Val Tyr Leu Ile Ala  
 35 40 45  
 Arg Asn Glu His His Cys Gln Met Met Gly Val Ala Gly Ala Glu Gln  
 50 55 60  
 Arg Leu Lys Thr Ile His Ala Tyr Gln Gly Met Ile Arg Phe Met Leu  
 65 70 75 80  
 Asp Glu Glu Gly Leu Asn Gly Lys Glu Ile Leu Asp Thr Ile Ala Gly  
 85 90 95  
 Glu Tyr Leu Glu Asp Phe Val Asn Tyr Arg Glu Gln Asp Phe Gly Met  
 100 105 110  
 Thr Asn Glu Glu Phe Ile Ala Ile Ile Lys Arg Ile Gly  
 115 120 125

&lt;210&gt; 6373

&lt;211&gt; 409

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6373

Leu Ile Lys Asp Lys Leu Ile Leu Ile Ile Gln Thr Ser Met Arg Leu  
 1 5 10 15  
 Phe Phe Thr Arg Lys Glu Leu Lys Leu Arg Arg Lys Arg Thr Ile Ala  
 20 25 30  
 Gly Ile Val Cys Leu Ala Leu Val Ala Gly Ile Tyr Trp Ile Leu Thr  
 35 40 45  
 Arg Pro His Lys Val Glu Pro Glu Val Pro Thr Val Ile Val Glu Pro  
 50 55 60  
 Ala Glu Arg Asp Asn Val Glu Ile Phe Gly Glu Tyr Val Gly Arg Ile  
 65 70 75 80  
 Arg Ala Gln Gln Phe Val Glu Val Arg Ala Arg Val Glu Gly Tyr Leu  
 85 90 95  
 Glu Ser Met Leu Phe Ala Glu Gly Thr Tyr Val Asn Lys Asn Gln Val  
 100 105 110  
 Leu Phe Val Ile Asn Gln Asp Gln Tyr Arg Ala Lys Ala Asp Lys Ala  
 115 120 125  
 Arg Ala Gln Leu Lys Lys Asp Glu Ala Gln Ala Leu Lys Ala Lys Arg  
 130 135 140  
 Asp Leu Glu Arg Ile Lys Pro Leu Tyr Ala Gln Asn Ala Ala Ser Gln  
 145 150 155 160  
 Leu Asp Leu Asp Asn Ala Glu Ala Ala Tyr Glu Ser Ala Val Ala Thr  
 165 170 175  
 Val Ala Met Ser Glu Ala Asp Leu Ala Gln Ala Glu Leu Glu Leu Gly  
 180 185 190  
 Tyr Thr Leu Val Arg Ser Pro Leu Ser Gly His Ile Ser Glu Arg Asn  
 195 200 205  
 Val Asp Leu Gly Thr Leu Val Gly Pro Gly Gly Lys Ser Leu Leu Ala  
 210 215 220  
 Thr Val Val Lys Ser Asp Thr Val Leu Val Asp Phe Ser Met Thr Ala  
 225 230 235 240  
 Leu Asp Tyr Leu Lys Ser Lys Glu Arg Asn Ile Asn Ile Gly Gln Gln  
 245 250 255  
 Asp Ser Ser Arg Ser Trp Gln Pro Asn Ile Thr Ile Thr Leu Ala Asp

Asn	Cys	Thr	Trp	Val	Ser	Gly	Trp	Ile	Arg	Val	Ser	Leu	Arg	Met	Tyr
1				5					10					15	
Cys	Ile	Val	Thr	Gly	Leu	Asn	Thr	Trp	Ile	Met	Tyr	Thr	Asn	Arg	Gly
			20					25					30		
Gln	Tyr	Ala	Val	Arg	Gly	Ser	Ile	Ile	Asp	Val	Phe	Ser	Phe	Ser	Ser
		35					40					45			
Glu	Tyr	Pro	Tyr	Arg	Ile	Asp	Phe	Phe	Gly	Asn	Asp	Val	Glu	Ser	Ile
	50					55					60				
Arg	Thr	Phe	Glu	Val	Asp	Ser	Gln	Leu	Ser	Lys	Glu	Lys	Lys	Glu	Ser
65				70						75					80
Ile	Val	Ile	Val	Pro	Asp	Leu	Ala	Val	Thr	Gly	Lys	Val	Thr	Thr	Ser
				85					90					95	
Phe	Leu	Asp	Phe	Ile	Pro	Lys	Asp	Thr	Thr	Leu	Ala	Met	Arg	Asp	Phe
			100					105					110		
Leu	Trp	Leu	Arg	Glu	Arg	Ile	Gln	Val	Val	His	Asp	Glu	Ser	Leu	Thr
		115					120					125			
Pro	Gln	Ala	Leu	Ala	Ser	Gln	Glu	Ala	Glu	Glu	Asn	Gly	Gly	Ile	Thr
	130					135					140				
Leu	Glu	Gly	Lys	Leu	Ile	Asp	Gly	Ser	Glu	Phe	Thr	Val	Arg	Ala	Leu
145				150						155					160
Asp	Phe	Arg	Arg	Met	Glu	Phe	Gly	Asn	Lys	Pro	Thr	Gly	Thr	Pro	Asp
				165					170					175	
Ala	Thr	Leu	Thr	Phe	His	Thr	Thr	Ala	Gln	Pro	Ile	Phe	His	Lys	Asn
			180					185					190		
Phe	Asp	Leu	Val	Ala	Glu	Ser	Phe	Lys	Glu	Tyr	Leu	Asn	Arg	Gly	Tyr
		195					200					205			
Ala	Leu	Tyr	Ile	Cys	Ser	Asp	Ser	Thr	Lys	Gln	Thr	Asp	Arg	Ile	Lys
	210					215					220				
Ala	Ile	Phe	Glu	Asp	Arg	Gly	Asp	Arg	Ile	Gln	Phe	Thr	Ala	Val	Glu
225				230						235					240
Arg	Thr	Leu	His	Glu	Gly	Phe	Ala	Asp	Asp	Thr	Leu	Lys	Leu	Cys	Leu
				245					250					255	
Phe	Thr	Asp	His	Gln	Leu	Phe	Asp	Arg	Phe	His	Lys	Tyr	Asn	Leu	Lys

Phe Thr Asp His Gln Leu Phe Asp Arg Phe His Lys Tyr Asn Leu Lys

			260					265					270			
Ser	Asp	Lys	Ala	Arg	Ser	Gly	Lys	Val	Ala	Leu	Ser	Leu	Lys	Glu	Leu	
		275					280					285				
Asn	Gln	Phe	Thr	Pro	Gly	Asp	Tyr	Val	Val	His	Thr	Asp	His	Gly	Val	
	290					295					300					
Gly	Arg	Phe	Ser	Gly	Leu	Val	Arg	Ile	Pro	Asn	Gly	Asp	Thr	Thr	Gln	
305					310					315					320	
Glu	Val	Met	Asn	Leu	Val	Tyr	Gln	Asn	Glu	Asp	Val	Val	Phe	Val	Ser	
				325					330					335		
Ile	His	Ser	Leu	His	Lys	Val	Ser	Lys	Tyr	Lys	Gly	Lys	Glu	Gly	Glu	
			340					345					350			
Ala	Pro	Arg	Leu	Asn	Lys	Leu	Gly	Thr	Gly	Ala	Trp	Glu	Lys	Leu	Lys	
		355					360					365				
Glu	Arg	Thr	Lys	Pro	Lys	Ile	Lys	Asp	Ile	Ala	Arg	Asp	Leu	Ile	Lys	
	370					375					380					
Leu	Tyr	Ser	Gln	Arg	Arg	Glu	Glu	Lys	Gly	Phe	Ala	Tyr	Ser	Pro	Asp	
385					390					395					400	
Ser	Phe	Leu	Gln	Arg	Glu	Leu	Glu	Ala	Ser	Phe	Ile	Tyr	Glu	Asp	Thr	
				405					410					415		
Pro	Asp	Gln	Ser	Lys	Ala	Thr	Ala	Asp	Val	Lys	Gln	Asp	Met	Glu	Arg	
			420					425					430			
Asp	Met	Pro	Met	Asp	Arg	Leu	Val	Cys	Gly	Asp	Val	Gly	Phe	Gly	Lys	
		435					440					445				
Thr	Glu	Val	Ala	Ile	Arg	Ala	Ala	Phe	Lys	Ala	Val	Ala	Asp	Asn	Lys	
	450					455					460					
Gln	Val	Ala	Val	Leu	Val	Pro	Thr	Thr	Val	Leu	Ala	Tyr	Gln	His	Phe	
465					470					475					480	
Gln	Thr	Phe	Arg	Asp	Arg	Leu	Lys	Gly	Leu	Pro	Cys	Arg	Val	Glu	Tyr	
				485					490					495		
Leu	Ser	Arg	Ala	Arg	Thr	Ala	Ala	Gln	Ala	Lys	Ala	Val	Ile	Lys	Gly	
			500					505					510			
Leu	Glu	Ala	Gly	Asp	Val	Asn	Ile	Leu	Ile	Gly	Thr	His	Arg	Ile	Leu	
		515					520					525				
Gly	Lys	Asp	Val	Lys	Phe	Lys	Asp	Leu	Gly	Leu	Leu	Ile	Ile	Asp	Glu	
	530					535					540					
Glu	Gln	Lys	Phe	Gly	Val	Ser	Val	Lys	Glu	Lys	Leu	Arg	Gln	Met	Lys	
545					550					555					560	
Val	Asn	Val	Asp	Thr	Leu	Thr	Met	Thr	Ala	Thr	Pro	Ile	Pro	Arg	Thr	
				565					570					575		
Leu	Gln	Phe	Ser	Leu	Met	Gly	Ala	Arg	Asp	Leu	Ser	Val	Ile	Ser	Thr	
			580					585					590			
Pro	Pro	Pro	Asn	Arg	Tyr	Pro	Ile	Gln	Thr	Glu	Val	His	Thr	Phe	Ser	
		595					600					605				
Glu	Glu	Val	Ile	Ala	Asp	Ala	Ile	Asn	Phe	Glu	Met	Ser	Arg	Asn	Gly	
	610					615										

Thr Pro Glu Ala Lys Arg Arg Leu Gln Ala Ile Glu Asn Phe Ser Asp  
 740 745 750  
 Leu Gly Ser Gly Ile His Ile Ala Met Gln Asp Leu Asp Ile Arg Gly  
 755 760 765  
 Ala Gly Asn Met Leu Gly Ala Glu Gln Ser Gly Phe Ile Ala Asp Leu  
 770 775 780  
 Gly Tyr Glu Thr Tyr Gln Lys Ile Leu Ser Glu Ala Val His Glu Leu  
 785 790 795 800  
 Lys Thr Asp Glu Phe Ala Glu Leu Tyr Ala Asp Glu Leu Lys Gly Glu  
 805 810 815  
 Gly Val Ile Ser Gly Glu Glu Phe Val Glu Glu Cys Gln Val Glu Ser  
 820 825 830  
 Asp Leu Glu Leu Leu Leu Pro Ala Asn Tyr Val Thr Gly Ser Ser Glu  
 835 840 845  
 Arg Met Leu Leu Tyr Arg Glu Leu Asp Gly Leu Thr Leu Asp Arg Asp  
 850 855 860  
 Val Asp Ala Phe Arg Ser Arg Leu Glu Asp Arg Phe Gly Pro Ile Pro  
 865 870 875 880  
 Pro Glu Thr Glu Glu Leu Leu Arg Ile Val Pro Leu Arg Arg Leu Ala  
 885 890 895  
 Ala Arg Leu Gly Val Glu Lys Val Phe Leu Lys Gly Gly Arg Met Thr  
 900 905 910  
 Leu Phe Phe Val Asn Asn Ala Glu Ser Pro Tyr Tyr Gln Ser Ala Ala  
 915 920 925  
 Phe Gly Lys Met Ile Asp Tyr Met Met Lys Tyr Thr Arg Arg Cys Asp  
 930 935 940  
 Leu Arg Glu Gln Asn Gly Arg Arg Ser Met Leu Val Lys Asp Ile Pro  
 945 950 955 960  
 Asn Val Glu Thr Ala Val Ser Val Leu Leu Glu Ile Val Ala Leu Pro  
 965 970 975  
 Val Lys Glu Lys Glu  
 980

<210> 6375  
 <211> 113  
 <212> PRT  
 <213> B.fragilis

<400> 6375  
 Arg Pro Ala Arg Pro Leu Tyr Arg Cys Asp Leu Ser Gln Gln Tyr Glu  
 1 5 10 15  
 Ser Ile Arg Val Ala Ala Thr His Gln Ala Leu Ser His Leu Val Val  
 20 25 30  
 Lys Ala Gly Ser Arg Arg Arg Gly Gly Gly Met Ile Thr Val Asp Thr  
 35 40 45  
 Cys Gly Met Thr Asn Tyr Ser Pro Leu Ile Pro Ala Ile Lys Ala Met  
 50 55 60  
 Cys Asn Ala Asn Pro Gly Asp Lys Met Glu Ile Val Thr Asp Gln Val  
 65 70 75 80  
 Ala Ala Phe Gln Asp Leu Lys Glu Tyr Leu Ser Glu Gln Gly Ile Gly  
 85 90 95  
 Phe Arg Glu Ile Tyr Asp Gly Glu Arg Met Thr Leu Gln Phe Thr Ile  
 100 105 110  
 Leu

<210> 6376  
 <211> 392  
 <212> PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6376

Leu Ile Thr Arg Met Leu Thr Gln Leu Ile Asn Ala Arg Ile Leu Thr  
 1 5 10 15  
 Pro Gln Gly Trp Met Lys Asp Gly Ser Val Leu Ile Arg Asp Asn Lys  
 20 25 30  
 Ile Leu Glu Val Thr Asn Cys Asp Leu Ala Val Ile Gly Ala Glu Leu  
 35 40 45  
 Ile Asp Val Lys Gly Met Tyr Val Val Pro Gly Gly Val Glu Ile His  
 50 55 60  
 Val His Gly Gly Gly Arg Asp Phe Met Glu Cys Thr Glu Asp Ala  
 65 70 75 80  
 Phe Arg Ala Ala Val His Thr His Met Lys His Gly Thr Thr Ser Ile  
 85 90 95  
 Phe Pro Thr Leu Ser Ser Ser Thr Val Pro Met Ile Gln Gln Ala Ala  
 100 105 110  
 Glu Thr Cys Thr Lys Leu Met Glu Glu Lys Asn Ser Pro Ile Leu Gly  
 115 120 125  
 Leu His Leu Glu Gly His Tyr Leu Asn Met Lys Met Ala Gly Gly Gln  
 130 135 140  
 Ile Pro Glu Asn Ile Lys Asn Pro Asp Pro Asn Glu Tyr Ile Pro Ile  
 145 150 155 160  
 Val Glu Gln Tyr His Cys Ile Lys Arg Trp Asp Ala Ala Pro Glu Leu  
 165 170 175  
 Pro Gly Ala Met Gln Phe Gly Lys Tyr Ile Ala Ala Lys Gly Ile Leu  
 180 185 190  
 Pro Ser Val Ala His Thr Gln Ala Glu Phe Glu Asp Ile Arg Thr Ala  
 195 200 205  
 Tyr Glu Ala Gly Tyr Thr His Ala Thr His Phe Tyr Asn Ala Met Pro  
 210 215 220  
 Gly Phe His Lys Arg Arg Glu Tyr Lys Tyr Glu Gly Thr Val Glu Ser  
 225 230 235 240  
 Ile Tyr Leu Leu Asp Asp Met Thr Val Glu Val Val Ala Asp Gly Ile  
 245 250 255  
 His Val Pro Pro Thr Ile Leu Arg Leu Val Tyr Lys Ile Lys Gly Val  
 260 265 270  
 Glu Arg Thr Cys Leu Ile Thr Asp Ala Leu Ala Cys Ala Asp Ser Asp  
 275 280 285  
 Ser Lys Glu Ala Phe Asp Pro Arg Val Ile Ile Glu Asp Gly Val Cys  
 290 295 300  
 Lys Leu Ala Asp His Ser Ala Leu Ala Gly Ser Val Ala Thr Met Asp  
 305 310 315 320  
 Arg Leu Ile Arg Thr Val Val Gln Lys Ala Glu Ile Pro Leu Glu Asp  
 325 330 335  
 Ala Val Arg Met Ala Ser Glu Thr Pro Ala Arg Ile Met Gly Val Tyr  
 340 345 350  
 Asp Arg Lys Gly Ser Leu Gln Lys Gly Lys Asp Ala Asp Ile Leu Val  
 355 360 365  
 Leu Asp Glu Asp Leu Asn Val Arg Ala Val Trp Ala Met Gly Lys Leu  
 370 375 380  
 Val Pro Glu Thr Asn Thr Leu Phe  
 385 390

&lt;210&gt; 6377

&lt;211&gt; 196

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6377

Asn His Arg Arg Tyr Arg Glu Thr Glu Leu Arg Met Lys Lys Ala Ile  
 1 5 10 15  
 Tyr Ser Phe Ile Tyr Tyr His Leu Leu Gly Trp Lys Thr Asn Val Thr  
 20 25 30  
 Val Pro Asn Tyr Asp Lys Cys Val Ile Cys Ala Ala Pro His Thr Thr  
 35 40 45  
 Asn Met Asp Leu Phe Ile Gly Lys Leu Phe Tyr Gly Ala Ile Gly Arg  
 50 55 60  
 Lys Thr Ser Phe Met Met Lys Lys Glu Trp Phe Phe Pro Leu Gly  
 65 70 75 80  
 Ile Leu Phe Lys Ala Val Gly Gly Ile Pro Val Asn Arg Gly Arg Lys  
 85 90 95  
 Ser Ser Leu Val Glu Gln Met Ala Glu Val Phe Ala Lys Arg Pro Lys  
 100 105 110  
 Phe His Leu Ala Ile Thr Pro Glu Gly Thr Arg Lys Arg Asn Pro Asn  
 115 120 125  
 Trp Lys Lys Gly Phe Tyr Tyr Ile Ala Leu Lys Ala Gln Val Pro Ile  
 130 135 140  
 Val Leu Ile Gly Ile Asp Tyr Asn Thr Lys Thr Val Thr Ser Thr Lys  
 145 150 155 160  
 Ala Ile Met Pro Ser Gly Asp Ile Glu Lys Asp Met Arg Glu Ile Lys  
 165 170 175  
 Leu Tyr Phe Lys Asp Phe Lys Gly Lys His Pro Glu Asn Phe Ser Ile  
 180 185 190  
 Gly Asp Val Glu  
 195

&lt;210&gt; 6378

&lt;211&gt; 460

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6378

Asp Met Lys Arg Thr Leu Ile Gln Asn Ala Thr Ile Val Asn Glu Gly  
 1 5 10 15  
 Arg Ser Val Arg Gly Ser Val Val Ile Glu Gly Glu Lys Ile Ala Glu  
 20 25 30  
 Val Leu Glu Lys Gly Gln Lys Pro Ala Ile Pro Cys Glu Thr Ile  
 35 40 45  
 Asn Ala Asn Gly Cys Tyr Leu Ile Pro Gly Val Ile Asp Asp His Val  
 50 55 60  
 His Phe Arg Asp Pro Gly Leu Thr His Lys Ala Asp Ile Ser Thr Glu  
 65 70 75 80  
 Ser Arg Ala Ala Ala Ala Gly Gly Val Thr Ser Ile Met Asp Met Pro  
 85 90 95  
 Asn Thr Asn Pro Gln Thr Thr Thr Leu Asp Ala Leu Asn Ala Lys Phe  
 100 105 110  
 Asp Leu Leu Ala Glu Lys Cys Ser Val Asn Tyr Ser Cys Tyr Phe Gly  
 115 120 125  
 Ala Thr Asn Asn Asn Tyr Thr Glu Phe Asp Lys Leu Asp Lys Asn Arg  
 130 135 140  
 Val Cys Gly Ile Lys Leu Phe Met Gly Ser Ser Thr Gly Asn Met Leu  
 145 150 155 160  
 Val Asp Lys Met Asn Ser Leu Leu Asn Ile Phe Asn Gly Thr Asp Leu  
 165 170 175  
 Leu Ile Ala Ala His Cys Glu Asn His Glu Thr Ile Lys Lys Asn Thr  
 180 185 190  
 Glu Lys Tyr Val Lys Glu Tyr Ile Glu Lys Tyr Pro His Gln Tyr Tyr

1.  $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$   
 2.  $\frac{1}{2} \times \frac{1}{4} = \frac{1}{8}$   
 3.  $\frac{1}{4} \times \frac{1}{4} = \frac{1}{16}$   
 4.  $\frac{1}{2} \times \frac{1}{8} = \frac{1}{16}$   
 5.  $\frac{1}{4} \times \frac{1}{8} = \frac{1}{32}$   
 6.  $\frac{1}{2} \times \frac{1}{16} = \frac{1}{32}$   
 7.  $\frac{1}{4} \times \frac{1}{16} = \frac{1}{64}$   
 8.  $\frac{1}{2} \times \frac{1}{32} = \frac{1}{64}$   
 9.  $\frac{1}{4} \times \frac{1}{32} = \frac{1}{128}$   
 10.  $\frac{1}{2} \times \frac{1}{64} = \frac{1}{128}$   
 11.  $\frac{1}{4} \times \frac{1}{128} = \frac{1}{256}$   
 12.  $\frac{1}{2} \times \frac{1}{256} = \frac{1}{256}$   
 13.  $\frac{1}{4} \times \frac{1}{256} = \frac{1}{512}$   
 14.  $\frac{1}{2} \times \frac{1}{512} = \frac{1}{512}$   
 15.  $\frac{1}{4} \times \frac{1}{512} = \frac{1}{1024}$   
 16.  $\frac{1}{2} \times \frac{1}{1024} = \frac{1}{1024}$   
 17.  $\frac{1}{4} \times \frac{1}{1024} = \frac{1}{2048}$   
 18.  $\frac{1}{2} \times \frac{1}{2048} = \frac{1}{2048}$   
 19.  $\frac{1}{4} \times \frac{1}{2048} = \frac{1}{4096}$   
 20.  $\frac{1}{2} \times \frac{1}{4096} = \frac{1}{4096}$   
 21.  $\frac{1}{4} \times \frac{1}{4096} = \frac{1}{8192}$   
 22.  $\frac{1}{2} \times \frac{1}{8192} = \frac{1}{8192}$   
 23.  $\frac{1}{4} \times \frac{1}{8192} = \frac{1}{16384}$   
 24.  $\frac{1}{2} \times \frac{1}{16384} = \frac{1}{16384}$   
 25.  $\frac{1}{4} \times \frac{1}{16384} = \frac{1}{32768}$   
 26.  $\frac{1}{2} \times \frac{1}{32768} = \frac{1}{32768}$   
 27.  $\frac{1}{4} \times \frac{1}{32768} = \frac{1}{65536}$   
 28.  $\frac{1}{2} \times \frac{1}{65536} = \frac{1}{65536}$   
 29.  $\frac{1}{4} \times \frac{1}{65536} = \frac{1}{131072}$   
 30.  $\frac{1}{2} \times \frac{1}{131072} = \frac{1}{131072}$   
 31.  $\frac{1}{4} \times \frac{1}{131072} = \frac{1}{262144}$   
 32.  $\frac{1}{2} \times \frac{1}{262144} = \frac{1}{262144}$   
 33.  $\frac{1}{4} \times \frac{1}{262144} = \frac{1}{524288}$   
 34.  $\frac{1}{2} \times \frac{1}{524288} = \frac{1}{524288}$   
 35.  $\frac{1}{4} \times \frac{1}{524288} = \frac{1}{1048576}$   
 36.  $\frac{1}{2} \times \frac{1}{1048576} = \frac{1}{1048576}$   
 37.  $\frac{1}{4} \times \frac{1}{1048576} = \frac{1}{2097152}$   
 38.  $\frac{1}{2} \times \frac{1}{2097152} = \frac{1}{2097152}$   
 39.  $\frac{1}{4} \times \frac{1}{2097152} = \frac{1}{4194304}$   
 40.  $\frac{1}{2} \times \frac{1}{4194304} = \frac{1}{4194304}$   
 41.  $\frac{1}{4} \times \frac{1}{4194304} = \frac{1}{8388608}$   
 42.  $\frac{1}{2} \times \frac{1}{8388608} = \frac{1}{8388608}$   
 43.  $\frac{1}{4} \times \frac{1}{8388608} = \frac{1}{16777216}$   
 44.  $\frac{1}{2} \times \frac{1}{16777216} = \frac{1}{16777216}$   
 45.  $\frac{1}{4} \times \frac{1}{16777216} = \frac{1}{33554432}$   
 46.  $\frac{1}{2} \times \frac{1}{33554432} = \frac{1}{33554432}$   
 47.  $\frac{1}{4} \times \frac{1}{33554432} = \frac{1}{67108864}$   
 48.  $\frac{1}{2} \times \frac{1}{67108864} = \frac{1}{67108864}$   
 49.  $\frac{1}{4} \times \frac{1}{67108864} = \frac{1}{134217728}$   
 50.  $\frac{1}{2} \times \frac{1}{134217728} = \frac{1}{134217728}$   
 51.  $\frac{1}{4} \times \frac{1}{134217728} = \frac{1}{268435456}$   
 52.  $\frac{1}{2} \times \frac{1}{268435456} = \frac{1}{268435456}$   
 53.  $\frac{1}{4} \times \frac{1}{268435456} = \frac{1}{536870912}$   
 54.  $\frac{1}{2} \times \frac{1}{536870912} = \frac{1}{536870912}$   
 55.  $\frac{1}{4} \times \frac{1}{536870912} = \frac{1}{1073741824}$   
 56.  $\frac{1}{2} \times \frac{1}{1073741824} = \frac{1}{1073741824}$   
 57.  $\frac{1}{4} \times \frac{1}{1073741824} = \frac{1}{2147483648}$   
 58.  $\frac{1}{2} \times \frac{1}{2147483648} = \frac{1}{2147483648}$   
 59.  $\frac{1}{4} \times \frac{1}{2147483648} = \frac{1}{4294967296}$   
 60.  $\frac{1}{2} \times \frac{1}{4294967296} = \frac{1}{4294967296}$   
 61.  $\frac{1}{4} \times \frac{1}{4294967296} = \frac{1}{8589934592}$   
 62.  $\frac{1}{2} \times \frac{1}{8589934592} = \frac{1}{8589934592}$   
 63.  $\frac{1}{4} \times \frac{1}{8589934592} = \frac{1}{17179869184}$   
 64.  $\frac{1}{2} \times \frac{1}{17179869184} = \frac{1}{17179869184}$   
 65.  $\frac{1}{4} \times \frac{1}{17179869184} = \frac{1}{34359738368}$   
 66.  $\frac{1}{2} \times \frac{1}{34359738368} = \frac{1}{34359738368}$   
 67.  $\frac{1}{4} \times \frac{1}{34359738368} = \frac{1}{68719476736}$   
 68.  $\frac{1}{2} \times \frac{1}{68719476736} = \frac{1}{68719476736}$   
 69.  $\frac{1}{4} \times \frac{1}{68719476736} = \frac{1}{137438953472}$   
 70.  $\frac{1}{2} \times \frac{1}{137438953472} = \frac{1}{137438953472}$   
 71.  $\frac{1}{4} \times \frac{1}{137438953472} = \frac{1}{274877906944}$   
 72.  $\frac{1}{2} \times \frac{1}{274877906944} = \frac{1}{274877906944}$   
 73.  $\frac{1}{4} \times \frac{1}{274877906944} = \frac{1}{549755813888}$   
 74.  $\frac{1}{2} \times \frac{1}{549755813888} = \frac{1}{549755813888}$   
 75.  $\frac{1}{4} \times \frac{1}{549755813888} = \frac{1}{1099511627776}$   
 76.  $\frac{1}{2} \times \frac{1}{1099511627776} = \frac{1}{1099511627776}$   
 77.  $\frac{1}{4} \times \frac{1}{1099511627776} = \frac{1}{2199023255552}$   
 78.  $\frac{1}{2} \times \frac{1}{2199023255552} = \frac{1}{2199023255552}$   
 79.  $\frac{1}{4} \times \frac{1}{2199023255552} = \frac{1}{4398046511104}$   
 80.  $\frac{1}{2} \times \frac{1}{4398046511104} = \frac{1}{4398046511104}$   
 81.  $\frac{1}{4} \times \frac{1}{4398046511104} = \frac{1}{8796093022208}$   
 82.  $\frac{1}{2} \times \frac{1}{8796093022208} = \frac{1}{8796093022208}$   
 83.  $\frac{1}{4} \times \frac{1}{8796093022208} = \frac{1}{17592186044416}$   
 84.  $\frac{1}{2} \times \frac{1}{17592186044416} = \frac{1}{175921$

<400> 6379

Arg	Arg	Val	Arg	Ser	Leu	Glu	Leu	Phe	Thr	Leu	Leu	Leu	Phe	Lys	Gln
1				5					10					15	
Lys	Arg	Tyr	Lys	Leu	Tyr	Met	Lys	Gln	Glu	Lys	Phe	Phe	Arg	Leu	Leu
			20					25					30		
Pro	Ile	Glu	Gly	Ala	Tyr	Asn	Ile	Arg	Asp	Leu	Gly	Gly	Tyr	Pro	Thr
		35				40					45				
Ser	Asp	His	Lys	His	Val	Lys	Trp	Lys	Thr	Phe	Ile	Arg	Ser	Gly	Asp
	50					55					60				
Leu	Asp	Lys	Leu	Thr	Glu	Ser	Asp	Leu	Asp	Tyr	Leu	Thr	Ser	Leu	His
65					70					75				80	
Ile	Arg	Thr	Asp	Ile	Asp	Phe	Arg	Ser	Met	Gln	Glu	Lys	Lys	Ala	Ala
				85				90						95	
Ala	Asp	Lys	Ile	Pro	Ser	Thr	Val	Thr	Gln	Tyr	Ile	Pro	Leu	Ser	Ile
			100					105					110		
Glu	Ala	Gly	Asp	Met	Thr	Asp	Met	Ala	His	Phe	Asn	Leu	Asn	Asn	Ile
		115					120					125			
Pro	Gly	Ile	Leu	Glu	Gln	Ala	Tyr	Val	Tyr	Ile	Ile	Gln	Asn	Ala	Gln
	130					135					140				
Asp	Thr	Tyr	Arg	Glu	Phe	Phe	Arg	Ile	Val	Ser	Glu	Glu	Arg	Asn	Thr

145                      150                      155                      160  
 Pro Leu Leu Phe His Cys Ser Ala Gly Lys Asp Arg Thr Gly Ile Ala  
                                  165                      170                      175  
 Ala Ala Leu Leu Leu Gly Ala Leu Gly Val Asp Arg Glu Val Ile Met  
                                  180                      185                      190  
 Glu Asp Tyr Met Leu Ser Ala Glu Tyr Ile Lys Gly Lys Tyr Asp Ala  
                                  195                      200                      205  
 Ile Val Gln Ala His Pro Gly Phe Ala Pro Leu Thr Thr Val Arg Lys  
                                  210                      215                      220  
 Glu Tyr Leu Glu Ala Ala Phe Gln Thr Ile Asp Thr Asp Tyr Gln Gly  
 225                                   230                                   235                                   240  
 Met Asp Asn Tyr Leu Lys Asn Gln Leu Gly Val Asp Thr His Arg Leu  
                                  245                                   250                                   255  
 Arg Met Leu Tyr Thr Glu  
                                  260

<210> 6380  
 <211> 161  
 <212> PRT  
 <213> B.fragilis

<400> 6380

Val Glu Arg Met Asp Ile Phe Leu Ile Ile Leu Gly Ser Ile Cys Leu  
 1                      5                      10                      15  
 Leu Val Gly Leu Ala Gly Cys Ile Val Pro Met Leu Pro Gly Pro Pro  
                                  20                      25                      30  
 Val Ser Tyr Leu Ala Leu Val Phe Leu His Phe Thr Asp Lys Val Ser  
                                  35                      40                      45  
 Phe Thr Ile Pro Gln Leu Phe Phe Trp Leu Phe Ile Val Val Leu Ile  
                                  50                      55                      60  
 Gln Ile Leu Asp Tyr Phe Ile Pro Met Phe Gly Val Lys Arg Leu Gly  
 65                                   70                                   75                                   80  
 Gly Thr Pro Trp Gly Lys Trp Gly Cys Ile Ile Gly Thr Phe Ala Gly  
                                  85                      90                      95  
 Ile Phe Leu Phe Ala Pro Trp Gly Val Phe Ile Gly Pro Phe Val Gly  
                                  100                      105                      110  
 Ala Val Val Gly Glu Leu Leu Gly Lys Glu Thr Lys Tyr Ala Leu  
                                  115                      120                      125  
 Lys Ala Gly Phe Gly Ala Phe Ala Gly Phe Leu Leu Gly Thr Val Leu  
                                  130                      135                      140  
 Lys Val Ala Val Cys Gly Trp Phe Ile Phe Cys Phe Ile Arg Ala Leu  
 145                                   150                                   155                                   160  
 Val

<210> 6381  
 <211> 263  
 <212> PRT  
 <213> B.fragilis

<400> 6381

Arg Lys Ser Ile Thr Phe Val Phe Lys Phe Arg His Asn Met Gln Thr  
 1                      5                      10                      15  
 Ser Asp Ser Ile Val Ile Ile Pro Thr Tyr Asn Glu Arg Glu Asn Ile  
                                  20                      25                      30  
 Glu Asn Ile Ile Arg Ala Val Phe Gly Leu Glu Lys Thr Phe His Ile  
                                  35                      40                      45  
 Leu Ile Ile Glu Asp Gly Ser Pro Asp Gly Thr Ala Ala Ile Val Lys  
                                  50                      55                      60



Thr Leu Gln Gln Glu Phe Pro Asp Arg Leu Phe Met Ile Glu Arg Lys  
 65 70 75 80  
 Gly Lys Leu Gly Leu Gly Thr Ala Tyr Ile Thr Gly Phe Lys Trp Ala  
 85 90 95  
 Leu Glu His Ser Tyr Glu Tyr Ile Phe Glu Met Asp Ala Asp Phe Ser  
 100 105 110  
 His Asn Pro Asn Asp Leu Pro Arg Leu Tyr Glu Ala Cys Ala Val Gln  
 115 120 125  
 Gly Gly Asp Val Ala Ile Gly Ser Arg Tyr Val Ser Gly Val Asn Val  
 130 135 140  
 Val Asn Trp Pro Met Gly Arg Val Leu Met Ser Tyr Phe Ala Ser Lys  
 145 150 155 160  
 Tyr Val Arg Ile Val Thr Gly Leu Pro Ile His Asp Thr Thr Ala Gly  
 165 170 175  
 Phe Lys Cys Tyr Arg Arg Gln Val Leu Glu Thr Ile Asp Leu Asp His  
 180 185 190  
 Ile Arg Phe Lys Gly Tyr Ala Phe Gln Ile Glu Met Lys Phe Thr Ala  
 195 200 205  
 Tyr Lys Cys Gly Phe Lys Ile Ile Glu Val Pro Val Ile Phe Ile Asn  
 210 215 220  
 Arg Glu Leu Gly Thr Ser Lys Met Asn Ser Ser Ile Phe Gly Glu Ala  
 225 230 235 240  
 Val Phe Gly Val Ile Lys Leu Lys Val Asn Ser Trp Phe His Thr Phe  
 245 250 255  
 Pro Gln Lys Thr Lys Met Asn  
 260

<210> 6382

<211> 689

<212> PRT

<213> B.fragilis

<400> 6382

Leu Ile Val Phe Ile Tyr Ile Cys Ser Glu Phe Pro Ile Thr Thr Lys  
 1 5 10 15  
 Thr Gln Ser Asn Leu Ile Asn Asn Lys Leu Met Lys Thr Asn Leu Ser  
 20 25 30  
 Ser Gln Ile Thr Leu Asn Arg Val Ser Pro Arg Tyr Tyr Arg Pro Glu  
 35 40 45  
 Asn Ala Phe Glu Arg Ser Val Leu Thr Arg Leu Glu Lys Ile Pro Thr  
 50 55 60  
 Asp Ile Tyr Glu Ser Val Glu Glu Gly Ala Asn His Ile Ala Cys Glu  
 65 70 75 80  
 Ile Ala Gln Val Ile Arg Asp Lys Gln Lys Ala Gly Arg Phe Cys Val  
 85 90 95  
 Leu Ala Leu Pro Gly Gly Asn Ser Pro Arg Ser Val Tyr Ala Glu Leu  
 100 105 110  
 Ile Arg Met His Lys Glu Glu Gly Leu Ser Phe Arg Asn Val Ile Val  
 115 120 125  
 Phe Asn Met Tyr Glu Tyr Tyr Pro Leu Ser Gln Asp Ala Ile Asn Ser  
 130 135 140  
 Asn Phe Asn Ala Leu Lys Glu Met Phe Leu Asp His Val Asp Ile Asp  
 145 150 155 160  
 Lys Gln Asn Ile Phe Thr Pro Asp Gly Thr Ile Ala Lys Asp Thr Ile  
 165 170 175  
 Phe Glu Tyr Cys Arg Leu Tyr Glu Gln Arg Ile Glu Ser Phe Gly Gly  
 180 185 190  
 Ile Asp Ile Ala Leu Leu Gly Ile Gly Arg Val Gly Asn Ile Ala Phe  
 195 200 205

Asn	Glu	Pro	Gly	Ser	Arg	Leu	Asn	Ser	Thr	Thr	Arg	Leu	Ile	Leu	Leu
210						215					220				
Asp	Ser	Gly	Ser	Arg	Asn	Glu	Ala	Ser	Lys	Ile	Phe	Gly	Thr	Ile	Asp
225					230					235					240
Asn	Thr	Pro	Ile	Ser	Ser	Ile	Thr	Met	Gly	Val	Ala	Thr	Ile	Leu	Ala
				245					250					255	
Ala	Lys	Lys	Ile	Tyr	Leu	Leu	Ala	Trp	Gly	Glu	Glu	Lys	Ala	His	Met
			260					265					270		
Val	Lys	Glu	Cys	Val	Glu	Gly	Asn	Val	Thr	Asp	Thr	Ile	Pro	Ala	Ser
		275					280					285			
Tyr	Leu	Gln	Thr	His	Asn	Asn	Ala	His	Val	Ala	Ile	Asp	Leu	Ser	Ala
290						295					300				
Ala	Ser	Asn	Leu	Thr	Arg	Ile	Gln	Arg	Pro	Trp	Leu	Val	Thr	Ser	Cys
305					310					315					320
Glu	Trp	Asn	Asp	Lys	Leu	Ile	Arg	Ser	Ala	Ile	Val	Trp	Leu	Cys	Gln
				325					330					335	
Leu	Thr	Gly	Lys	Pro	Ile	Leu	Lys	Leu	Thr	Asn	Lys	Asp	Tyr	Asn	Glu
			340					345					350		
Asn	Gly	Leu	Ser	Glu	Leu	Leu	Ala	Leu	Phe	Gly	Ser	Ala	Tyr	Asn	Val
		355					360					365			
Asn	Ile	Lys	Ile	Phe	Asn	Asp	Leu	Gln	His	Thr	Ile	Thr	Gly	Trp	Pro
370						375					380				
Gly	Gly	Lys	Pro	Lys	Ala	Asp	Asp	Thr	Tyr	Arg	Pro	Glu	Arg	Ala	Lys
385					390					395					400
Pro	Tyr	Pro	Lys	Arg	Val	Val	Val	Phe	Ser	Pro	His	Pro	Asp	Asp	Asp
				405					410					415	
Val	Ile	Ser	Met	Gly	Gly	Thr	Ile	Arg	Arg	Leu	Val	Glu	Gln	Lys	His
			420					425					430		
Glu	Val	His	Val	Ala	Tyr	Gln	Thr	Ser	Gly	Asn	Ile	Ala	Val	Gly	Asp
		435					440					445			
Glu	Glu	Val	Val	Arg	Phe	Met	His	Phe	Ile	Asn	Gly	Phe	Asn	Gln	Ile
		450				455					460				
Phe	Ile	Asn	Ser	Glu	Asp	Gln	Val	Ile	Ser	Glu	Lys	Tyr	Ala	Glu	Ile
465					470					475					480
Arg	Lys	Phe	Leu	Lys	Asp	Lys	Lys	Asp	Gly	Asp	Met	Asp	Thr	Arg	Asp
				485					490					495	
Ile	Leu	Thr	Ile	Lys	Gly	Leu	Ile	Arg	Arg	Gly	Glu	Ala	Arg	Thr	Ala
			500					505					510		
Cys	Thr	Tyr	Asn	Asn	Ile	Pro	Leu	Glu	Arg	Cys	His	Phe	Leu	Asp	Leu
		515					520					525			
Pro	Phe	Tyr	Glu	Thr	Gly	Lys	Ile	Gln	Lys	Asn	Pro	Ile	Ser	Glu	Ala
						535					540				
Asp	Val	Glu	Ile	Val	Arg	Asn	Leu	Leu	Arg	Glu	Val	Lys	Pro	His	Gln
545					550					555					560
Ile	Phe	Val	Ala	Gly	Asp	Leu	Ala	Asp	Pro	His	Gly	Thr	His	Arg	Val
				565					570					575	
Cys	Thr	Asp	Ala	Val	Phe	Ala	Ala	Val	Asp	Leu	Glu	Lys	Glu	Glu	Gly
			580					585					590		
Ala	Glu	Trp	Leu	Lys	Asp	Cys	Arg	Ile	Trp	Met	Tyr	Arg	Gly	Ala	Trp
			595				600					605			
Ala	Glu	Trp	Glu	Ile	Glu	Asn	Ile	Glu	Met	Ala	Val	Pro	Ile	Ser	Pro
						615					620				
Glu	Glu	Leu	Arg	Ala	Lys	Arg	Asn	Ser	Ile	Leu	Lys	His	Gln	Ser	Gln
625					630					635					640
Met	Glu	Ser	Ala	Pro	Phe	Leu	Gly	Asn	Asp	Glu	Arg	Leu	Phe	Trp	Gln
				645					650					655	
Arg	Ser	Glu	Asp	Arg	Asn	Arg	Gly	Thr	Ala	Ala	Leu	Tyr	Asp	Ser	Leu
			660					665				670			
Gly	Leu	Ala	Ser	Tyr	Glu	Ala	Met	Glu	Ala	Phe	Val	Glu	Tyr	Ile	Pro

675

680

685

Leu

<210> 6383  
 <211> 204  
 <212> PRT  
 <213> B.fragilis

&lt;400&gt; 6383

Trp	Ala	Lys	Ile	Ala	Phe	Met	Thr	Ile	Thr	Glu	Leu	Gln	His	Gln	Tyr
1				5					10					15	
Ala	Gly	His	Pro	Asn	Val	Glu	Ala	Leu	Asn	Lys	Leu	Leu	Gly	Glu	Pro
			20					25					30		
Ala	Val	Arg	His	Ile	Tyr	Cys	Gly	Gly	Leu	Tyr	Ala	Ser	Ala	Ala	Ser
		35					40					45			
Leu	Phe	Ala	Ser	Ala	Leu	Val	Glu	Lys	Ser	Pro	Cys	Pro	Phe	Val	Phe
	50					55				60					
Ile	Leu	Gly	Asp	Leu	Glu	Glu	Ala	Gly	Tyr	Phe	Tyr	His	Asp	Leu	Thr
65					70					75				80	
Gln	Val	Leu	Gly	Thr	Glu	Arg	Ile	Leu	Phe	Phe	Pro	Ser	Ser	Phe	Arg
				85					90					95	
Arg	Ser	Val	Lys	Tyr	Gly	Gln	Lys	Asp	Ala	Ala	Asn	Glu	Ile	Leu	Arg
			100					105						110	
Thr	Glu	Val	Leu	Ser	Arg	Leu	Gln	Lys	Gly	Glu	Glu	Gly	Leu	Cys	Ile
		115					120					125			
Val	Thr	Tyr	Pro	Asp	Ala	Leu	Ala	Glu	Lys	Val	Val	Ser	Arg	Gln	Glu
		130				135					140				
Leu	Ser	Glu	Asn	Thr	Leu	Lys	Leu	His	Val	Gly	Glu	Arg	Val	Asp	Thr
145					150					155				160	
Gly	Phe	Ile	Thr	Asp	Val	Leu	His	Ser	Tyr	Gly	Phe	Glu	Tyr	Val	Asp
				165					170					175	
Tyr	Val	Tyr	Glu	Pro	Gly	Pro	Val	Cys	Arg	Ser	Trp	Lys	Tyr	Tyr	Arg
			180					185					190		
Arg	Val	Phe	Ile	Phe	Val	Arg	Val	Ser	Leu	Ser	Tyr				
		195					200								

<210> 6384  
 <211> 65  
 <212> PRT  
 <213> B.fragilis

&lt;400&gt; 6384

Leu	Tyr	Lys	Ile	Gly	Ser	Cys	Ser	Thr	Leu	Gln	Met	Ile	Ile	Arg	Ala
1				5					10					15	
Gln	Ile	Ile	Arg	Leu	Glu	Asp	Ser	Ile	Met	Lys	Leu	Glu	Lys	Tyr	Tyr
			20					25					30		
Arg	Thr	Lys	Thr	Ala	Gly	Leu	Glu	Gly	Gln	Pro	Asn	Lys	Lys	Lys	Asn
		35				40					45				
Lys	Arg	Met	Ala	Asp	Ile	Val	Ala	Val	Asn	Val	Lys	Tyr	Val	Leu	Phe
	50					55					60				

Gly  
65

<210> 6385  
 <211> 642  
 <212> PRT  
 <213> B.fragilis

&lt;400&gt; 6385

Leu	Tyr	Ala	Val	Gly	Ser	Ser	Ser	Ala	Leu	Ser	Val	Pro	Ser	Tyr	Ser
1				5					10					15	
Glu	Ile	Ile	Arg	Ile	Phe	Val	Pro	Met	Lys	Glu	Tyr	Arg	Leu	Thr	Asp
			20					25					30		
Trp	Leu	Pro	Thr	Thr	Lys	Lys	Glu	Val	Glu	Leu	Arg	Gly	Trp	Asp	Glu
		35					40					45			
Leu	Asp	Val	Ile	Leu	Phe	Ser	Gly	Asp	Ala	Tyr	Val	Asp	His	Pro	Ser
	50					55					60				
Phe	Gly	Ala	Ala	Val	Ile	Gly	Arg	Ile	Leu	Glu	Ala	Glu	Gly	Leu	Arg
65					70					75				80	
Val	Ala	Ile	Val	Pro	Gln	Pro	Asn	Trp	Arg	Asp	Asp	Leu	Arg	Asp	Phe
				85					90					95	
Arg	Lys	Leu	Gly	Arg	Pro	Arg	Leu	Phe	Phe	Gly	Ile	Ser	Ala	Gly	Cys
			100					105					110		
Met	Asp	Ser	Met	Val	Asn	Lys	Tyr	Thr	Ala	Asn	Lys	Arg	Leu	Arg	Ser
	115						120					125			
Asp	Asp	Ala	Tyr	Thr	Pro	Asp	Gly	Arg	Pro	Asp	Met	Arg	Pro	Glu	Tyr
	130					135					140				
Pro	Ser	Ile	Val	Tyr	Thr	Gln	Ile	Leu	Lys	Lys	Leu	Tyr	Pro	Asp	Val
145					150					155				160	
Pro	Val	Val	Leu	Gly	Ile	Glu	Ala	Ser	Met	Arg	Arg	Leu	Ser	His	
				165				170					175		
Tyr	Asp	Tyr	Trp	Gln	Asp	Arg	Leu	Lys	Lys	Ser	Ile	Leu	Cys	Glu	Ser
			180					185					190		
Gly	Ala	Asp	Met	Leu	Ile	Tyr	Gly	Met	Gly	Glu	Lys	Pro	Ile	Cys	Glu
		195					200					205			
Leu	Val	Arg	Arg	Leu	Thr	Ala	Leu	Cys	Asp	Asn	Gln	Asp	Gly	Val	Ile
	210					215					220				
Ser	Ser	Ser	Asp	Ile	His	Ser	Pro	Ala	Leu	Ser	Ser	Ile	Pro	Gln	Thr
225					230					235				240	
Ala	Tyr	Leu	Thr	Arg	Lys	Tyr	Glu	Ser	Asp	Glu	Asn	Asp	Ile	Thr	Leu
				245					250					255	
Tyr	Ser	His	Glu	Glu	Cys	Leu	Ala	Asp	Lys	Lys	Lys	Gln	Ala	Thr	Asn
		260						265					270		
Phe	Arg	His	Ile	Glu	Glu	Glu	Ser	Asn	Lys	Tyr	Ala	Ala	Ala	Arg	Ile
		275					280					285			
Val	Gln	Ala	Val	Asp	Gly	Lys	Thr	Val	Val	Val	Asn	Pro	Pro	Tyr	Pro
	290					295					300				
Pro	Met	Thr	Glu	Lys	Glu	Leu	Asp	Arg	Ser	Phe	Asp	Leu	Pro	Tyr	Thr
305					310					315				320	
Arg	Leu	Pro	His	Pro	Lys	Tyr	Lys	Gly	Lys	Arg	Ile	Pro	Ala	Tyr	Asp
				325					330					335	
Met	Ile	Lys	Phe	Ser	Val	Asn	Ile	His	Arg	Gly	Cys	Phe	Gly	Gly	Cys
			340					345					350		
Ala	Phe	Cys	Thr	Ile	Ser	Ala	His	Gln	Gly	Lys	Phe	Ile	Val	Ser	Arg
		355				360						365			
Ser	Lys	Glu	Ser	Ile	Leu	Lys	Glu	Val	Lys	Glu	Val	Val	Gln	Leu	Pro
	370					375					380				
Asp	Phe	Lys	Gly	Asn	Leu	Ser	Asp	Leu	Gly	Gly	Pro	Ser	Ala	Asn	Met
385					390					395				400	
Tyr	Lys	Met	Gly	Gly	Lys	Asp	Leu	Ser	Leu	Cys	Lys	Arg	Cys	Lys	Arg
			405						410					415	
Pro	Ser	Cys	Ile	His	Pro	Lys	Val	Cys	Pro	Asn	Leu	Asn	Thr	Asp	His
			420					425					430		
Arg	Pro	Leu	Leu	Asp	Ile	Tyr	Tyr	Ala	Val	Asp	Ser	Leu	Pro	Glu	Ile
		435					440					445			
Lys	Arg	Ser	Phe	Ile	Gly	Ser	Gly	Val	Arg	Tyr	Asp	Leu	Leu	Leu	His
	450					455					460				

1  
 2  
 3  
 4  
 5  
 6  
 7  
 8  
 9  
 10  
 11  
 12  
 13  
 14  
 15  
 16  
 17  
 18  
 19  
 20  
 21  
 22  
 23  
 24  
 25  
 26  
 27  
 28  
 29  
 30  
 31  
 32  
 33  
 34  
 35  
 36  
 37  
 38  
 39  
 40  
 41  
 42  
 43  
 44  
 45  
 46  
 47  
 48  
 49  
 50  
 51  
 52  
 53  
 54  
 55  
 56  
 57  
 58  
 59  
 60  
 61  
 62  
 63  
 64  
 65  
 66  
 67  
 68  
 69  
 70  
 71  
 72  
 73  
 74  
 75  
 76  
 77  
 78  
 79  
 80  
 81  
 82  
 83  
 84  
 85  
 86  
 87  
 88  
 89  
 90  
 91  
 92  
 93  
 94  
 95  
 96  
 97  
 98  
 99  
 100  
 101  
 102  
 103  
 104  
 105  
 106  
 107  
 108  
 109  
 110  
 111  
 112  
 113  
 114  
 115  
 116  
 117  
 118  
 119  
 120  
 121  
 122  
 123  
 124  
 125  
 126  
 127  
 128  
 129  
 130  
 131  
 132  
 133  
 134  
 135  
 136  
 137  
 138  
 139  
 140  
 141  
 142  
 143  
 144  
 145  
 146  
 147  
 148  
 149  
 150  
 151  
 152  
 153  
 154  
 155  
 156  
 157  
 158  
 159  
 160  
 161  
 162  
 163  
 164  
 165  
 166  
 167  
 168  
 169  
 170  
 171  
 172  
 173  
 174  
 175  
 176  
 177  
 178  
 179  
 180  
 181  
 182  
 183  
 184  
 185  
 186  
 187  
 188  
 189  
 190  
 191  
 192  
 193  
 194  
 195  
 196  
 197  
 198  
 199  
 200  
 201  
 202  
 203  
 204  
 205  
 206  
 207  
 208  
 209  
 210  
 211  
 212  
 213  
 214  
 215  
 216  
 217  
 218  
 219  
 220  
 221  
 222  
 223  
 224  
 225  
 226  
 227  
 228  
 229  
 230  
 231  
 232  
 233  
 234  
 235  
 236  
 237  
 238  
 239  
 240  
 241  
 242  
 243  
 244  
 245  
 246  
 247  
 248  
 249  
 250  
 251  
 252  
 253  
 254  
 255  
 256  
 257  
 258  
 259  
 260  
 261  
 262  
 263  
 264  
 265  
 266  
 267  
 268  
 269  
 270  
 271  
 272  
 273  
 274  
 275  
 276  
 277  
 278  
 279  
 280  
 281  
 282  
 283  
 284  
 285  
 286  
 287  
 288  
 289  
 290  
 291  
 292  
 293  
 294  
 295  
 296  
 297  
 298  
 299  
 300  
 301  
 302  
 303  
 304  
 305  
 306  
 307  
 308  
 309  
 310  
 311  
 312  
 313  
 314  
 315  
 316  
 317  
 318  
 319  
 320  
 321  
 322  
 323  
 324  
 325  
 326  
 327  
 328  
 329  
 330  
 331  
 332  
 333  
 334  
 335  
 336  
 337  
 338  
 339  
 340  
 341  
 342  
 343  
 344  
 345  
 346  
 347  
 348  
 349  
 350  
 351  
 352  
 353  
 354  
 355  
 356  
 357  
 358  
 359  
 360  
 361  
 362  
 363  
 364  
 365  
 366  
 367  
 368  
 369  
 370  
 371  
 372  
 373  
 374  
 375  
 376  
 377  
 378  
 379  
 380  
 381  
 382  
 383  
 384  
 385  
 386  
 387  
 388  
 389  
 390  
 391  
 392  
 393  
 394  
 395  
 396  
 397  
 398  
 399  
 400  
 401  
 402  
 403  
 404  
 405  
 406  
 407  
 408  
 409  
 410  
 411  
 412  
 413  
 414  
 415  
 416  
 417  
 418  
 419  
 420  
 421  
 422  
 423  
 424  
 425  
 426  
 427  
 428  
 429  
 430  
 431  
 432  
 433  
 434  
 435  
 436  
 437  
 438  
 439  
 440  
 441  
 442  
 443  
 444  
 445  
 446  
 447  
 448  
 449  
 450  
 451  
 452  
 453  
 454  
 455  
 456  
 457  
 458  
 459  
 460

Gln Ser Lys Asp Ala Thr Val Asn Lys Ile Thr Ala Glu Tyr Thr Arg  
 465 470 475 480  
 Glu Leu Ile Ala Arg His Val Ser Gly Arg Leu Lys Val Ala Pro Glu  
 485 490 495  
 His Thr Ser Asp Arg Val Leu Ser Ile Met Arg Lys Pro Ala Phe Ser  
 500 505 510  
 Gln Phe Gly Glu Phe Lys Lys Ile Phe Asp Arg Ile Asn Arg Glu Leu  
 515 520 525  
 Gly Leu Arg Gln Gln Leu Ile Pro Tyr Phe Ile Ser Ser His Pro Gly  
 530 535 540  
 Cys Lys Glu Glu Asp Met Ala Glu Leu Ala Val Ile Thr Lys Gln Leu  
 545 550 555 560  
 Asp Phe His Leu Glu Gln Val Gln Asp Phe Thr Pro Thr Pro Met Thr  
 565 570 575  
 Val Ala Thr Glu Ala Trp Tyr Thr Gly Phe His Pro Tyr Thr Leu Glu  
 580 585 590  
 Pro Val Phe Ser Ala Lys Thr Gln Arg Glu Lys Leu Ala Gln Arg Gln  
 595 600 605  
 Phe Phe Phe Trp Tyr Lys Pro Glu Glu Arg Arg Asn Ile Ile Asn Glu  
 610 615 620  
 Leu Arg Arg Ile Gly Arg Ala Asp Leu Ile Asp Lys Leu Tyr Gly Lys  
 625 630 635 640  
 Arg Lys

<210> 6386

<211> 226

<212> PRT

<213> B.fragilis

<400> 6386

Leu Pro Val Leu Lys Gln Ser Asn Met Glu Lys His Asn Pro Ser Ser  
 1 5 10 15  
 Phe Thr Val Asp Ser Ser Ser Pro Ala His Arg Ser Ser Phe Ala Val  
 20 25 30  
 His Asp Leu Thr Pro Tyr Ile Asn Trp Ile Tyr Phe Phe His Ala Trp  
 35 40 45  
 Gly Phe Gln Pro Arg Tyr Ala Ala Ile Ala Asn Ile His Gly Cys Asp  
 50 55 60  
 Ser Cys Arg Ala Ile Trp Leu Thr Thr Phe Pro Glu Glu Glu Arg Ser  
 65 70 75 80  
 Lys Ala Ser Glu Ala Met Gln Leu Tyr Lys Glu Ala Asn Arg Met Leu  
 85 90 95  
 Asn Glu Leu Asp Arg Asn Phe Glu Val Lys Thr Ile Phe Lys Leu Cys  
 100 105 110  
 Pro Ala Asn Ala Asp Gly Asp Asn Leu Ile Ile Asn Gly Ile Thr Phe  
 115 120 125  
 Pro Leu Leu Arg Gln Gln Val Lys Lys Lys Glu Asn Glu Pro Phe Leu  
 130 135 140  
 Cys Leu Ser Asp Phe Val Arg Pro Leu Ser Ser Gly Ile Thr Asp Val  
 145 150 155 160  
 Val Gly Ala Phe Ala Ser Ser Ile Asp Ala Asp Met Glu Gly Leu Tyr  
 165 170 175  
 Glu Lys Asp Pro Tyr Lys His Leu Leu Val Gln Thr Leu Ser Asp Arg  
 180 185 190  
 Leu Ala Glu Ala Ala Thr Glu Lys Met His Glu Tyr Val Arg Lys Glu  
 195 200 205  
 Ala Trp Gly Tyr Ala Lys Asp Glu Asn Leu Ser Ile Pro Asp Val Phe  
 210 215 220

Asn Thr  
225

<210> 6387

<211> 135

<212> PRT

<213> B.fragilis

<400> 6387

Ala	Val	Gly	Ser	Arg	Arg	Gln	Cys	Leu	Pro	Val	Ser	Lys	Val	Thr	Leu
1				5					10					15	
His	Arg	Tyr	Ile	His	Phe	Ala	Phe	Ile	Glu	Asp	Ala	Ala	Leu	Arg	Thr
			20					25					30		
Ile	Thr	Glu	Glu	Gln	His	Ala	Val	Gly	Gly	Asn	Ser	Asn	Ala	Tyr	His
		35					40					45			
Arg	Ile	Asn	Val	Gly	Ile	Leu	Ile	Val	Asp	Ser	Phe	His	Ser	Gln	Thr
		50				55					60				
Phe	Ser	Asp	Tyr	Ile	Thr	Thr	Gly	Ile	Asp	Asp	Gly	Asp	Ile	Phe	Arg
65					70				75					80	
Met	Arg	His	Tyr	Met	Ile	Lys	Val	Thr	Asp	Thr	Tyr	Leu	Ile	Glu	Gln
				85				90					95		
Asp	Ala	Glu	Asn	Lys	Tyr	Ser	Arg	Arg	Gln	Tyr	Val	Ile	Lys	Tyr	Lys
			100					105					110		
Tyr	Gly	Ser	Pro	Gly	Glu	Gly	Met	Cys	Tyr	Gln	Asn	Arg	Gln	Ala	Asp
		115					120					125			
Asp	Ser	Lys	Met	Glu	Asn	Thr									
		130				135									

<210> 6388

<211> 263

<212> PRT

<213> B.fragilis

<400> 6388

Ser	Leu	Pro	Ser	Leu	Arg	Asn	Asn	Lys	Lys	Asn	Lys	Lys	Ile	Gly	Arg
1				5				10						15	
Met	Val	Ser	Ala	Asn	Pro	Tyr	Asn	Arg	Tyr	Ile	Cys	Phe	Gln	Ile	Arg
			20					25					30		
Arg	Leu	Arg	Tyr	Met	Glu	Thr	Met	Phe	Asp	Thr	Leu	Leu	Gln	Leu	Pro
		35					40					45			
Leu	Phe	Gln	Gly	Leu	Cys	His	Glu	Asp	Phe	Thr	Asn	Ile	Leu	Glu	Lys
	50					55					60				
Val	Lys	Leu	His	Phe	Thr	Arg	His	Lys	Pro	Gly	Glu	Pro	Leu	Ile	Lys
65					70				75					80	
Ser	Gly	Glu	Val	Cys	Asp	Gln	Leu	Leu	Phe	Leu	Leu	Lys	Gly	Arg	Leu
				85				90					95		
Ser	Ser	Val	Thr	Val	Ser	Glu	Asp	Asp	Thr	Leu	Thr	Val	Ile	Glu	Tyr
			100					105					110		
Phe	Glu	Ala	Pro	Ala	Val	Leu	Glu	Pro	Tyr	Ser	Met	Phe	Gly	Met	Asn
	115					120						125			
Thr	Arg	Tyr	Ile	Ser	Ser	Tyr	Ile	Pro	His	Asn	Glu	Glu	Ala	Gln	Met
	130					135					140				
Val	Ser	Ile	Ser	Lys	Ser	Phe	Val	Met	Gly	Glu	Leu	Phe	Lys	Tyr	Asp
145				150					155					160	
Ile	Phe	Arg	Leu	Asn	Tyr	Met	Asn	Ile	Val	Ser	Asn	Arg	Ala	Gln	Asn
			165					170						175	
Leu	Tyr	Thr	Arg	Leu	Trp	Asp	Lys	Ala	Pro	Lys	Asp	Ile	Glu	Asp	Lys
			180					185					190		
Ile	Ile	Arg	Phe	Ile	Leu	Gly	His	Ile	Glu	Arg	Met	Thr	Gly	Glu	Lys

195	200	205
Leu Phe Lys Val Lys Met Asp Asp Leu Ala Arg Met Leu Asp Asp Thr		
210	215	220
Arg Leu Asn Val Ser Lys Ala Leu Asn Gly Leu Gln Glu Leu Asn Leu		
225	230	235
Leu Glu Leu His Arg Lys Glu Ile Arg Ile Pro Asp Leu Ser Leu Leu		
	245	250
Thr Glu Trp Asn Glu Lys Arg		255
260		

&lt;210&gt; 6389

&lt;211&gt; 417

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6389

Leu Ile Trp Phe His Tyr Glu Thr Asp Glu Leu Tyr Ile Cys Arg Leu		
1	5	10
Asn Leu Lys Ile Glu Pro Tyr Met Lys Tyr Asn Phe Asp Glu Val Ile		
	20	25
Glu Arg Arg Gly Thr Asp Ser Val Lys Tyr Asp Ala Val Ser Glu Arg		
	35	40
Trp Gly Arg Ser Asp Leu Leu Pro Met Trp Val Ala Asp Met Asp Phe		
50	55	60
Arg Thr Pro Pro Phe Val Ile Glu Ala Ile Arg Arg Arg Leu Asp His		
65	70	75
Glu Val Leu Gly Tyr Thr Phe Ala Cys Glu Ala Trp Tyr Thr Ser Ile		
	85	90
Ile Asn Trp Gln Lys Glu Arg His Gly Trp Asn Val Thr Arg Glu Met		
	100	105
Leu Thr Phe Thr Pro Gly Ile Val Arg Gly Leu Ala Phe Ala Leu Gln		
	115	120
Cys Phe Thr Ala Pro Gly Asp Lys Val Met Val Met Pro Pro Val Tyr		
	130	135
His Pro Phe Phe Leu Val Thr Glu His Asn His Arg Glu Val Val Tyr		
145	150	155
Ser Pro Leu Leu Leu Lys Asp Gly Gln Tyr Gln Ile Asp Phe Glu Arg		
	165	170
Phe Arg Ala Asp Val Lys Gly Cys Lys Met Leu Ile Leu Ser Asn Pro		
	180	185
His Asn Pro Gly Gly Arg Val Trp Thr Arg Glu Glu Leu Ala Glu Ile		
	195	200
Ala Glu Ile Cys Phe Asp Asn Gln Val Leu Val Ile Ser Asp Glu Ile		
	210	215
His Ala Asp Leu Thr Leu Pro Gly Tyr Thr His Pro Thr Phe Ala Leu		
225	230	235
Val Ser Glu Lys Ala Arg Arg Asn Ser Leu Val Phe Met Ser Pro Ser		
	245	250
Lys Ala Phe Asn Met Pro Gly Leu Ala Ser Ser Tyr Cys Ile Ile Glu		
	260	265
Asp Glu Ala Ile Arg His Arg Phe Gln Thr Tyr Met Glu Ala Ser Glu		
	275	280
Phe Ser Glu Gly His Leu Phe Ala Tyr Leu Gly Val Ala Ala Ala Tyr		
290	295	300
Ser Asn Gly Thr Glu Trp Leu Asp Gln Ala Leu Glu Tyr Ile Gln Glu		
305	310	315
Asn Ile Asp Phe Thr Asp Glu Tyr Leu Lys Thr His Ile Pro Ala Ile		
	325	330
Arg Met Ile Arg Pro Gln Ala Ser Tyr Leu Ile Phe Leu Asp Cys Arg		

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

<400> 6390

Ser	Pro	Ile	Thr	Leu	Asp	Phe	Leu	Ser	Phe	Ile	Thr	Asn	Phe	Val	Ile
1				5					10					15	
Thr	Ile	Asn	Leu	Thr	Thr	Ser	Ala	Ile	Met	Lys	Lys	Gly	Phe	Lys	Ile
			20					25					30		
Thr	Ala	Ile	Val	Ile	Gly	Val	Ile	Leu	Ile	Leu	Met	Phe	Leu	Leu	Pro
			35				40					45			
Phe	Ala	Phe	Arg	Gly	Lys	Ile	Glu	Gly	Ile	Val	Lys	Ser	Glu	Gly	Asn
	50					55				60					
Lys	Met	Leu	Asn	Gly	His	Phe	Asp	Phe	Ser	Ser	Leu	Asp	Ile	Ser	Leu
65					70					75					80
Phe	Arg	Asn	Phe	Pro	Lys	Ala	Ser	Val	Thr	Leu	Asn	Asp	Phe	Trp	Leu
				85					90					95	
Lys	Gly	Thr	Gly	Glu	Phe	Glu	Asn	Asp	Thr	Leu	Val	Lys	Ala	Gly	Glu
			100					105					110		
Val	Thr	Ala	Ala	Ile	Asn	Leu	Phe	Ser	Leu	Phe	Gly	Asp	Asp	Gly	Tyr
			115				120					125			
Asp	Val	Ser	Lys	Val	Ser	Val	Glu	Asn	Thr	Arg	Leu	His	Ala	Ile	Val
	130					135					140				
Leu	Pro	Asp	Gly	Lys	Ala	Asn	Trp	Asp	Ile	Met	Lys	Pro	Asp	Ser	Ser
145					150					155					160
Thr	Ala	Ser	Glu	Thr	Gln	Glu	Ser	Gly	Glu	Ser	Ser	Thr	Phe	Arg	Ile
				165					170					175	
Lys	Leu	Gln	Arg	Phe	Val	Ile	Lys	Asn	Met	Asn	Val	Val	Tyr	Asp	Asp
			180					185					190		
Arg	Gln	Ser	Ala	Met	Tyr	Ala	Asp	Ile	His	Asn	Phe	Asn	Ala	Leu	Cys
			195				200				205				
Ser	Gly	Asp	Leu	Gly	Ser	Asp	Gln	Thr	Leu	Leu	Ser	Leu	Glu	Ala	Glu
	210					215				220					
Thr	Glu	Ala	Leu	Thr	Tyr	Lys	Met	Asn	Gly	Ile	Pro	Phe	Leu	Ser	Gln
225					230					235					240
Ala	Asn	Val	Tyr	Ala	Lys	Met	Asp	Val	Asp	Ala	Asp	Leu	Ala	His	Asn
				245					250					255	
Lys	Phe	Thr	Leu	Lys	Lys	Asn	Glu	Phe	Arg	Leu	Asn	Ala	Ile	Lys	Ala
			260					265					270		
Gly	Ile	Asp	Gly	Trp	Ile	Glu	Leu	Lys	Asp	Pro	Ala	Ile	Asp	Met	Asp
		275					280					285			
Leu	Lys	Leu	Asn	Thr	Ser	Glu	Ile	Gly	Phe	Lys	Glu	Ile	Leu	Ser	Leu
	290					295					300				
Ile	Pro	Ala	Ile	Tyr	Ser	Lys	Glu	Phe	Lys	Asn	Leu	Lys	Thr	Asp	Gly
305					310					315					320
Thr	Ala	Thr	Leu	Glu	Ala	Thr	Ala	Lys	Gly	Ile	Leu	Gln	Gly	Asp	Thr



Val	Pro	Gln	Phe	Asp	Val	Arg	Leu	Ala	Val	Lys	Asn	Ala	Met	Phe	Arg
			340					345					350		
Tyr	Pro	Ser	Leu	Pro	Ala	Gly	Val	Asp	Gln	Ile	Asn	Ile	Asp	Ala	Gln
		355					360					365			
Val	Arg	Asn	Pro	Gly	Gly	Asn	Ile	Asp	Leu	Thr	Glu	Ile	Ser	Ile	His
	370					375					380				
Pro	Phe	Ser	Phe	Arg	Leu	Ala	Glu	Asn	Pro	Phe	Ser	Leu	Thr	Ala	Asp
385					390					395					400
Ile	Lys	Thr	Pro	Val	Ser	Asp	Pro	Asp	Phe	Thr	Ala	Glu	Ala	Lys	Gly
			405						410					415	
Val	Leu	Asn	Leu	Gly	Met	Ile	Lys	Gln	Val	Tyr	Pro	Leu	Asp	Asp	Met
			420					425					430		
Glu	Leu	Asn	Gly	Thr	Val	Arg	Ala	Asp	Met	Thr	Met	Ala	Gly	His	Leu
		435					440					445			
Ser	Tyr	Ile	Glu	Lys	Glu	Gln	Tyr	Asp	Arg	Phe	Ser	Ala	Ser	Gly	Thr
	450					455				460					
Ile	Ala	Leu	Ser	Asp	Met	Asn	Leu	Lys	Met	Lys	Glu	Met	Pro	Asp	Ile
465					470					475					480
Glu	Ile	Lys	Lys	Ser	Leu	Phe	Thr	Phe	Thr	Pro	Lys	Tyr	Leu	Gln	Leu
			485						490					495	
Ser	Glu	Thr	Thr	Val	Ala	Ile	Gly	Lys	Asn	Asp	Leu	Thr	Ala	Asp	Cys
			500					505					510		
Arg	Phe	Glu	Asn	Tyr	Met	Gly	Tyr	Ala	Leu	Lys	Gly	Gly	Thr	Leu	Lys
	515						520					525			
Gly	Thr	Leu	Asn	Val	Arg	Ser	Asn	His	Leu	Asn	Leu	Asn	Asp	Phe	Met
	530					535					540				
Thr	Ala	Thr	Thr	Asp	Ser	Ala	Ala	Gln	Thr	Ser	Gln	Ala	Ser	Ser	Thr
545					550					555					560
Glu	Glu	Thr	Ala	Ser	Met	Ile	Glu	Val	Pro	Gln	Asn	Ile	Asp	Phe	Gln
			565						570					575	
Met	Asp	Ala	Gly	Leu	Lys	Glu	Val	Leu	Phe	Asp	Lys	Met	Thr	Phe	Thr
		580						585					590		
Asn	Met	Asn	Gly	Lys	Leu	Ile	Val	Lys	Asp	Gly	Lys	Val	Asp	Met	Thr
		595					600					605			
Asn	Leu	Ser	Met	Asn	Thr	Met	Gly	Gly	Ser	Val	Val	Met	Asn	Gly	Tyr
	610					615					620				
Tyr	Ser	Thr	Ala	Asp	Pro	Lys	Lys	Pro	Glu	Met	Asn	Ala	Gly	Phe	Arg
625					630					635					640
Met	Glu	Asn	Ile	Gly	Phe	Ala	Gln	Ala	Tyr	Lys	Ala	Leu	Asp	Met	Val
			645						650					655	
Gln	Gln	Met	Ala	Pro	Ile	Phe	Glu	Asn	Leu	Lys	Gly	Asn	Phe	Ser	Gly
			660					665					670		
Asn	Met	His	Ile	Arg	Thr	Leu	Leu	Asp	Asn	Gln	Met	Ser	Pro	Val	Met
		675													

Val	Ser	Leu	Asp	Thr	Lys	Ser	Met	Thr	Asn	Gln	Ala	Val	Glu	Ala	Val
				805					810					815	
Thr	Asp	Lys	Ala	Ile	Ser	Glu	Ile	Gly	Lys	Lys	Leu	Gly	Leu	Asp	Ser
			820					825					830		
Ala	Thr	Thr	Ala	Asn	Lys	Asp	Ser	Val	Lys	Glu	Lys	Val	Lys	Glu	Lys
		835					840					845			
Ala	Val	Glu	Lys	Ala	Leu	Asp	Phe	Leu	Lys	Lys	Lys	Ile	Lys		
		850				855					860				

&lt;210&gt; 6391

&lt;211&gt; 368

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6391

Met	Glu	Lys	Thr	Lys	Arg	Asp	Ser	Arg	His	Ile	Asp	Pro	Leu	Lys	Asp
1				5					10					15	
Glu	Glu	Lys	Phe	Phe	Gln	Trp	Leu	Lys	Phe	Lys	Ser	Val	Arg	Met	Asn
			20					25					30		
Gln	Glu	His	Leu	Ser	Lys	Asp	Asp	Tyr	Glu	Arg	Leu	Arg	Gln	Arg	Ile
		35				40						45			
His	Val	Ser	Leu	Arg	Met	Leu	Arg	Arg	Lys	Arg	Thr	Val	Arg	Arg	Val
	50					55					60				
Ala	Tyr	Tyr	Gly	Val	Ser	Val	Cys	Val	Ile	Ile	Ala	Leu	Gly	Ile	Val
65					70					75					80
Ala	Tyr	Leu	Asn	His	Tyr	Glu	Arg	Val	Glu	Pro	Val	Pro	Ser	Val	Val
				85					90					95	
Glu	Lys	Lys	Ala	Glu	Ile	Val	Trp	Gln	Pro	Leu	Lys	Ser	Glu	Asp	Ile
			100					105					110		
Arg	Leu	Val	Ser	Gly	Asp	Ser	Ile	Thr	Ser	Phe	Arg	Gln	Asn	Val	Gln
		115				120						125			
Leu	Leu	Leu	Ser	Lys	Asp	Gly	Ser	Ala	Met	Val	Tyr	His	Pro	Asn	Ser
	130					135					140				
Gly	Gln	Lys	Arg	Ile	Arg	Met	Glu	Gln	Asp	Glu	Val	Asn	Glu	Leu	Val
145					150					155					160
Val	Pro	Tyr	Gly	Lys	Arg	Ser	Lys	Val	Lys	Leu	Glu	Asp	Gly	Thr	Glu
				165					170					175	
Ile	Trp	Leu	Asn	Ser	Gly	Ser	Val	Leu	Lys	Phe	Pro	Thr	His	Phe	Ser
			180					185					190		
Gly	Glu	Lys	Arg	Glu	Val	Ser	Leu	Lys	Gly	Glu	Met	Tyr	Ala	Glu	Val
		195					200					205			
Thr	Ala	Asp	Ser	Lys	Lys	Pro	Phe	Ile	Val	His	Thr	Ala	His	Phe	Asp
	210					215					220				
Ile	Gln	Val	Tyr	Gly	Thr	Arg	Phe	Asn	Ile	Ser	Ala	Tyr	Glu	Asp	Glu
225					230					235					240
Pro	Thr	Pro	Ser	Cys	Val	Leu	Val	Asp	Gly	Ile	Val	Gly	Phe	Arg	Pro
				245					250					255	
Glu	Ser	Gly	Pro	Glu	Ile	Arg	Met	Lys	Thr	Asn	Glu	Lys	Val	Leu	Tyr
			260					265					270		
Asp	Gly	Lys	Arg	Phe	Glu	Lys	Arg	Lys	Val	Ser	Ala	Ser	Arg	Tyr	Thr
		275					280					285			
Cys	Trp	Lys	Glu	Gly	Tyr	Leu	Glu	Leu	Asp	Asp	Ala	Asn	Ile	Met	Asp
	290					295					300				
Val	Leu	Asn	Arg	Ile	Gly	Arg	Tyr	Tyr	Asn	Leu	Ser	Phe	Ser	Phe	Gly
305					310					315					320
Asp	Lys	Lys	Arg	Leu	Thr	Gly	Arg	Lys	Cys	Ser	Gly	Lys	Ile	Tyr	Leu
				325					330					335	
Ser	Asp	Asn	Ile	Asp	Asn	Val	Leu	Thr	Thr	Ile	Ser	Leu	Leu	Tyr	Ser
			340					345					350		

1  
 2  
 3  
 4  
 5  
 6  
 7  
 8  
 9  
 10  
 11  
 12  
 13  
 14  
 15  
 16  
 17  
 18  
 19  
 20  
 21  
 22  
 23  
 24  
 25  
 26  
 27  
 28  
 29  
 30  
 31  
 32  
 33  
 34  
 35  
 36  
 37  
 38  
 39  
 40  
 41  
 42  
 43  
 44  
 45  
 46  
 47  
 48  
 49  
 50  
 51  
 52  
 53  
 54  
 55  
 56  
 57  
 58  
 59  
 60  
 61  
 62  
 63  
 64  
 65  
 66  
 67  
 68  
 69  
 70  
 71  
 72  
 73  
 74  
 75  
 76  
 77  
 78  
 79  
 80  
 81  
 82  
 83  
 84  
 85  
 86  
 87  
 88  
 89  
 90  
 91  
 92  
 93  
 94  
 95  
 96  
 97  
 98  
 99  
 100

Thr Asp Tyr Arg Lys Glu Glu Arg Thr Ile Phe Ile Ser Glu Asn Pro  
 355 360 365

<210> 6392

<211> 313

<212> PRT

<213> B.fragilis

<400> 6392

Tyr Ser Met Thr Lys Pro Ala Pro Thr Pro Leu Tyr Asn Glu Phe Thr  
 1 5 10 15  
 Phe Phe Leu Lys Lys Tyr Phe Pro Tyr Lys Val Gln Lys Ile Ser Leu  
 20 25 30  
 Asn Ala Gly Phe Thr Cys Pro Asn Arg Asp Gly Thr Lys Gly Leu Gly  
 35 40 45  
 Gly Cys Thr Tyr Cys Asn Asn Gln Thr Phe Asn Pro Glu Tyr Cys Lys  
 50 55 60  
 Thr Glu Lys Ser Val Thr Arg Gln Leu Glu Glu Gly Lys Gln Phe Phe  
 65 70 75 80  
 Ala His Lys Tyr Pro Asp Met Lys Tyr Leu Ala Tyr Phe Gln Ala Tyr  
 85 90 95  
 Thr Asn Thr Tyr Ala Glu Leu Glu Gly Leu Lys Gly Lys Tyr Glu Glu  
 100 105 110  
 Ala Leu Ser Val Asp Gly Val Val Gly Leu Val Ile Gly Thr Arg Pro  
 115 120 125  
 Asp Cys Met Pro Asp Pro Leu Leu Arg Tyr Leu Glu Glu Leu Asn Lys  
 130 135 140  
 His Thr Phe Leu Leu Val Glu Tyr Gly Ile Glu Thr Thr Arg Asp Val  
 145 150 155 160  
 Thr Leu Lys Arg Ile Asn Arg Gly His Thr Tyr Ala Asp Thr Val Glu  
 165 170 175  
 Thr Val Asn Arg Thr Ala Ala Cys Gly Ile Leu Thr Gly Gly His Val  
 180 185 190  
 Ile Leu Gly Leu Pro Gly Glu Thr His Asp Glu Ile Ile Ala Gln Ala  
 195 200 205  
 Ala Glu Leu Ser Arg Leu Pro Leu Thr Thr Leu Lys Met His Gln Leu  
 210 215 220  
 Gln Leu Ile Arg Gly Thr Lys Met Ala Arg Glu Phe Glu Cys Arg Pro  
 225 230 235 240  
 Glu Asp Phe His Leu Phe Ser Val Asp Glu Tyr Ile Asp Leu Val Ile  
 245 250 255  
 Asp Tyr Val Glu His Leu Arg Pro Asp Leu Ile Leu Glu Arg Phe Val  
 260 265 270  
 Ser Gln Ser Pro Lys Glu Leu Leu Ile Ala Pro Asp Trp Gly Leu Lys  
 275 280 285  
 Asn Tyr Glu Phe Thr Ala Arg Val Gln Lys Arg Met Lys Glu Arg Gly  
 290 295 300  
 Ala Tyr Gln Gly Lys Ala Tyr Leu Val  
 305 310

<210> 6393

<211> 292

<212> PRT

<213> B.fragilis

<400> 6393

Lys Gln Tyr Tyr Met Gly Asn Asp Lys Arg Val Arg Lys Pro Glu Trp  
 1 5 10 15  
 Leu Lys Ile Ser Ile Gly Ala Asn Glu Arg Tyr Thr Glu Thr Lys Arg

	20		25		30
Ile Val Glu Ser His Cys Leu His Thr Ile Cys Ser Ser Gly Arg Cys					
	35		40		45
Pro Asn Met Gly Glu Cys Trp Gly Lys Gly Thr Ala Thr Phe Met Ile					
	50		55		60
Ala Gly Asp Ile Cys Thr Arg Ser Cys Lys Phe Cys Asn Thr Gln Thr					
65		70		75	80
Gly Arg Pro Leu Pro Leu Asp Pro Asp Glu Pro Ala His Val Ala Glu					
	85		90		95
Ser Ile Ala Leu Met Lys Leu Ser His Ala Val Ile Thr Ser Val Asp					
	100		105		110
Arg Asp Asp Leu Pro Asp Leu Gly Ala Ala His Trp Ala Gln Thr Ile					
	115		120		125
Arg Glu Ile Lys Arg Leu Asn Pro Glu Thr Thr Thr Glu Val Leu Ile					
	130		135		140
Pro Asp Phe Gln Gly Arg Lys Glu Leu Ile Asp Gln Val Ile Lys Ala					
145		150		155	160
Cys Pro Glu Ile Ile Ser His Asn Met Glu Thr Val Lys Arg Ile Ser					
	165		170		175
Pro Gln Val Arg Ser Ala Ala Asn Tyr His Thr Ser Leu Glu Val Ile					
	180		185		190
Arg Gln Ile Ala Glu Ser Gly Ile Thr Ala Lys Ser Gly Ile Met Val					
	195		200		205
Gly Leu Gly Glu Thr Pro Ala Glu Val Glu Glu Leu Met Asp Asp Leu					
	210		215		220
Ile Ser Val Gly Cys Lys Ile Leu Thr Ile Gly Gln Tyr Leu Gln Pro					
225		230		235	240
Thr His Lys His Phe Pro Val Ala Ala Tyr Ile Thr Pro Glu Gln Phe					
	245		250		255
Ala Val Tyr Lys Glu Thr Gly Leu Lys Lys Gly Phe Glu Gln Val Glu					
	260		265		270
Ser Ala Pro Leu Val Arg Ser Ser Tyr His Ala Glu Lys His Ile Arg					
	275		280		285
Phe Asn Asn Lys					
	290				

&lt;210&gt; 6394

&lt;211&gt; 149

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6394

Gln Leu Glu Gln Ser Met Lys Arg Glu Arg Ile Val Arg Thr Glu Asn					
1		5		10	15
Ile Asp Arg Gln Arg Ile Lys Tyr Arg Val Leu Phe Gly Phe Ile Phe					
	20		25		30
Ile Met Cys Cys Asn Gly Ala Ala Leu Pro Ser Glu Asp Gly Lys Met					
	35		40		45
Pro Asp Trp Lys Phe Ser Phe Ser Leu Lys Arg Ile Pro Met Ile Arg					
	50		55		60
Ile Phe Asp Glu Ile Glu Gln Lys Ser Asp Phe Val Phe Ala Trp Ser					
65		70		75	80
Cys Asp Ile Asp Asn Glu Ile His Glu Glu Ile Ser Ile Cys Val Thr					
	85		90		95
Glu Glu Pro Ile Gln Lys Val Met Glu Lys Val Leu Lys Gly Ser Gly					
	100		105		110
Leu Val Tyr Gln Arg Leu Asp Arg Gln Ile Val Val Tyr Arg Leu Leu					
	115		120		125
Gly His Asn Ala Cys Arg Val Asp Ser Val Arg Val Met Thr Asn Met					

130  
Glu Gln Asn Asp Arg  
145

135

140

<210> 6395  
<211> 364  
<212> PRT  
<213> B.fragilis

<400> 6395

Val	Cys	Val	Gln	Trp	Leu	Leu	Thr	Lys	Arg	Gly	Trp	Thr	Asn	Ile	Lys
1				5					10					15	
Thr	Lys	Thr	Val	Ile	Ser	Phe	Thr	Val	Lys	Val	Met	Lys	Ile	Arg	Lys
			20					25					30		
Asp	Asp	Ile	Leu	Leu	Ile	Leu	Leu	Ser	Leu	Leu	Phe	Ala	Asp	Cys	Arg
		35					40					45			
Val	Gly	Lys	Ala	Glu	Pro	Val	Ala	Asp	Pro	Met	Glu	Glu	Glu	Gly	Ile
	50					55				60					
Ser	Val	Val	Arg	Tyr	Asp	Lys	Leu	Leu	Asp	Glu	Tyr	Val	Arg	Phe	Asn
65					70					75					80
Ser	Phe	Ser	Ala	Leu	Gln	Lys	Met	Asn	Leu	Glu	Tyr	Ala	Leu	Pro	Thr
				85					90					95	
Lys	Leu	Leu	Ile	Glu	Asp	Val	Leu	Ala	Ile	Gly	Gln	Val	Ser	Asp	Asp
			100					105					110		
His	Ile	Phe	Gln	Arg	Leu	Lys	Thr	Phe	Tyr	Ser	Asp	Thr	Thr	Leu	Val
		115					120					125			
Arg	Leu	Ile	Glu	Asp	Val	Glu	Ala	Lys	Tyr	Pro	Glu	Leu	Glu	Ser	Val
	130					135					140				
Glu	Lys	Asn	Leu	Thr	Lys	Gly	Phe	Gly	Lys	Leu	Gln	Lys	Glu	Ile	Pro
145					150					155					160
Asp	Ile	Met	Ile	Pro	Met	Ile	Tyr	Thr	Gln	Ile	Ser	Ala	Phe	Asn	Glu
				165					170					175	
Ser	Ile	Val	Leu	Ser	Asp	Ser	Val	Leu	Gly	Ile	Ser	Leu	Asp	Lys	Tyr
		180					185					190			
Met	Gly	Glu	Asp	Tyr	Pro	Leu	Tyr	Lys	Arg	Phe	Tyr	Tyr	Asn	Tyr	Gln
	195					200						205			
Arg	Arg	Thr	Met	Arg	Pro	Asp	Arg	Ile	Val	Pro	Asp	Cys	Leu	Val	Phe
	210					215					220				
Tyr	Leu	Met	Ser	Gln	Tyr	Pro	Phe	Pro	Met	Asp	Tyr	Ser	Arg	Thr	Leu
225					230					235					240
Leu	Asp	Val	Met	Met	His	Tyr	Gly	Lys	Ile	Asn	Tyr	Val	Val	Gln	His
				245					250					255	
Leu	Leu	Asp	Tyr	Ser	Ser	Ser	Glu	Glu	Ala	Leu	Gly	Tyr	Ser	Asp	Leu
		260					265					270			
Glu	Arg	Glu	Trp	Cys	Lys	Glu	Asn	Gln	Gln	Gln	Met	Trp	Arg	Tyr	Ile
		275					280					285			
Leu	Glu	Gln	Asp	His	Leu	His	Ala	Thr	Asp	Pro	Met	Val	Val	Arg	Gln
	290					295					300				
Tyr	Thr	Arg	Pro	Ala	Pro	Phe	Thr	Asn	Thr	Leu	Gly	Glu	Asn	Ala	Pro
305					310					315					320
Ser	Met	Val	Gly	Thr	Trp	Ile	Gly	Thr	Lys	Ile	Ile	Thr	Ser	Tyr	Met
			325						330					335	
Lys	His	His	Lys	Lys	Thr	Thr	Leu	Arg	Gln	Leu	Leu	Glu	Met	Ser	Asp
			340					345					350		
Tyr	Glu	Arg	Met	Phe	Thr	Glu	Ser	Arg	Phe	Asn	Pro				
	355						360								

<210> 6396  
<211> 85

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6396

Tyr	Arg	His	Lys	Asn	Lys	Glu	Glu	Asp	Arg	Pro	Glu	Glu	Leu	Leu	Ala
1				5					10					15	
Tyr	Pro	Leu	Leu	Phe	Ile	Ser	Leu	Thr	Arg	Lys	Ser	Val	Glu	Glu	Leu
			20					25					30		
Ile	Phe	Gln	Thr	Val	Phe	Asp	Pro	Phe	His	Cys	Phe	Leu	Thr	Phe	Phe
		35					40					45			
Ser	Ser	Leu	Leu	Arg	Thr	Phe	Phe	Tyr	Val	Phe	Gly	Cys	Ile	Phe	Gly
	50					55					60				
Cys	Ile	Phe	Asp	Phe	Leu	Lys	Cys	Ile	Phe	Gly	Ala	Phe	Phe	His	Val
65					70					75					80
Ile	Ser	Tyr	Phe	Leu											
				85											

&lt;210&gt; 6397

&lt;211&gt; 904

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6397

Cys	Met	Thr	Lys	Lys	Ile	Asn	Leu	Phe	Pro	Ser	Leu	Ile	Arg	Phe	Arg
1				5					10					15	
Glu	Thr	Asn	Arg	Leu	Lys	Met	Ala	Ile	Ala	Ala	Ser	Ile	Met	Leu	Trp
			20					25					30		
Cys	Met	Ala	Pro	Gln	Gln	Ala	Val	Ala	Asp	Thr	Tyr	Glu	Lys	His	Glu
		35					40					45			
Val	Ala	Ser	Ile	Gln	Gln	Gln	Lys	Val	Lys	Ala	Asn	Gly	Thr	Val	Val
	50					55					60				
Asp	Gln	Thr	Gly	Glu	Pro	Leu	Ile	Gly	Val	Ser	Val	Lys	Val	Lys	Asp
65					70				75						80
Ala	Pro	Asn	Gly	Thr	Ile	Thr	Asn	Leu	Asp	Gly	Lys	Phe	Ser	Ile	Asp
				85					90					95	
Val	Ala	Lys	Gly	Ala	Thr	Leu	Glu	Ile	Ser	Tyr	Val	Gly	Tyr	Lys	Thr
		100						105					110		
Val	Ile	Val	Lys	Ala	Glu	Ser	Thr	Pro	Met	His	Ile	Val	Leu	Lys	Glu
		115					120					125			
Asp	Ser	Glu	Met	Ile	Asp	Glu	Val	Val	Val	Val	Gly	Tyr	Gly	Ser	Gln
	130					135					140				
Lys	Lys	Val	Asn	Val	Thr	Gly	Ala	Val	Gly	Met	Val	Asn	Ser	Glu	Val
145					150					155					160
Leu	Glu	Ala	Arg	Pro	Val	Gln	Asn	Val	Ser	Gln	Ala	Leu	Gln	Gly	Val
				165					170					175	
Val	Pro	Gly	Leu	Asn	Leu	Ser	Val	Asn	Asn	Gly	Gly	Gly	Ser	Leu	Asp
			180					185					190		
Ser	Glu	Met	Ser	Ile	Asn	Ile	Arg	Gly	Thr	Gly	Thr	Ile	Gly	Asp	Gly
	195						200					205			
Ser	Gly	Ser	Ser	Pro	Leu	Val	Leu	Ile	Asp	Gly	Ile	Glu	Gly	Ser	Leu
	210					215					220				
Asn	Thr	Val	Asn	Pro	Asn	Asp	Ile	Glu	Ser	Val	Ser	Val	Leu	Lys	Asp
225					230					235					240
Ala	Ala	Ser	Ala	Ser	Ile	Tyr	Gly	Ala	Arg	Ala	Ala	Phe	Gly	Val	Val
				245					250					255	
Leu	Val	Lys	Thr	Lys	Ser	Gly	Gln	Ser	Gly	Lys	Pro	Arg	Val	Thr	Tyr
		260					265						270		
Ser	Gly	Asn	Val	Arg	Phe	Ser	Asp	Ala	Thr	Asn	Ile	Pro	Glu	Met	Leu
		275					280					285			

Asp	Ser	Tyr	Thr	Phe	Ala	Gln	Tyr	Phe	Asn	Arg	Ala	Ala	Ala	Asn	Asp
290						295					300				
Asn	Gly	Gly	Thr	Val	Phe	Ser	Lys	Glu	Gln	Leu	Glu	Arg	Ile	Lys	Ala
305					310					315					320
Tyr	Gln	Asp	Gly	Thr	Leu	Lys	Ser	Ser	Ala	Thr	Phe	Asn	Glu	Gln	Ser
				325					330					335	
Arg	Arg	Trp	Asn	Tyr	Tyr	Thr	Gly	Ser	Asn	Ala	Asn	Thr	Asp	Trp	Phe
			340					345					350		
Lys	Glu	Val	Tyr	Glu	Asp	Trp	Val	Pro	Ser	Met	Asp	His	Asn	Leu	Ser
		355					360					365			
Ile	Ser	Gly	Gly	Thr	Asp	Lys	Thr	Gln	Tyr	Ile	Val	Ser	Gly	Ser	Phe
370						375					380				
Leu	Asp	Gln	Lys	Gly	Leu	Ile	Arg	His	Gly	Lys	Asp	Thr	Phe	Gln	Arg
385					390					395					400
Tyr	Thr	Leu	Asn	Gly	Arg	Ile	Thr	Ser	Asn	Ile	Thr	Asp	Trp	Phe	Thr
				405					410					415	
Leu	Gly	Tyr	Ser	Thr	Lys	Trp	Thr	Arg	Glu	Asp	Tyr	Asp	Arg	Pro	Ser
			420					425					430		
Tyr	Leu	Thr	Gly	Leu	Phe	Phe	His	Asn	Val	Ala	Arg	Arg	Trp	Pro	Thr
		435					440						445		
Val	Pro	Val	Tyr	Asp	Asp	Asn	Gly	Tyr	Leu	Thr	Glu	Pro	Ser	Glu	Leu
		450				455					460				
Ile	Gln	Leu	Glu	Asp	Gly	Gly	Arg	Gln	Ile	Asn	Gln	Lys	Asp	Leu	Phe
465					470					475					480
Thr	Gln	Gln	Leu	Gln	Leu	Thr	Phe	Glu	Pro	Ile	Lys	Asn	Trp	Lys	Ile
				485					490					495	
Tyr	Val	Glu	Gly	Ser	Leu	Arg	Val	Thr	Ala	Asn	Asn	Gln	His	Trp	Glu
			500					505					510		
Val	Leu	Pro	Val	Tyr	Gln	His	Asp	Val	Asp	Gly	Asn	Pro	Val	Gly	Met
		515					520					525			
Thr	Trp	Asp	Ala	Gly	Val	Gly	Ser	Tyr	Pro	Val	Gly	Gly	Ser	Lys	Val
		530				535					540				
Ser	Glu	Tyr	Ala	Tyr	Lys	Glu	Asn	Tyr	Tyr	Ser	Thr	Asn	Ile	Tyr	Ser
545					550					555					560
Asp	Tyr	Phe	Lys	Gln	Leu	Asp	Asn	Gly	His	Tyr	Phe	Lys	Ala	Met	Val
			565						570					575	
Gly	Phe	Asn	Ala	Glu	Leu	Tyr	Lys	Asp	Arg	Ser	Val	Ser	Ala	Asp	Lys
			580					585					590		
Ser	Thr	Leu	Ile	Thr	Pro	Ser	Val	Pro	Thr	Ile	Asn	Thr	Ala	Val	Gly
		595					600					605			
Glu	Pro	Ser	Val	Ala	Gly	Gly	Tyr	Arg	His	Thr	Ser	Val	Ala	Gly	Phe
		610				615					620				
Phe	Ala	Arg	Leu	Asn	Trp	Asn	Tyr	Lys	Asp	Arg	Tyr	Met	Leu	Glu	Ala
625					630					635					640
Asn	Gly	Arg	Tyr	Asp	Gly	Ser	Ser	Arg	Phe	Ile	Gly	Asp	Lys	Arg	Trp
				645					650					655	
Gly	Phe	Phe	Pro	Ser	Phe	Ser	Gly	Gly	Trp	Asn	Ile	Ala	Arg	Glu	Ala
			660					665					670		
Phe	Phe	Glu	Glu	Thr	Ala	Asn	Lys	Leu	Lys	Ile	Gly	Thr	Leu	Lys	Leu
		675					680					685			
Arg	Ala	Ser	Trp	Gly	Gln	Leu	Gly	Asn	Thr	Asn	Thr	Asn	Glu	Ala	Trp
		690				695					700				
Tyr	Pro	Phe	Tyr	Gln	Thr	Leu	Pro	Gln	Gly	Gln	Asn	Tyr	Gly	Trp	Leu
705					710					715					720
Val	Asn	Gly	Val	Arg	Gln	Asn	Tyr	Ala	Ser	Asn	Pro	Gly	Ile	Val	Ser
				725					730					735	
Ser	Glu	Lys	Thr	Trp	Glu	Thr	Ile	Glu	Thr	Trp	Asp	Ala	Gly	Leu	Asp
			740					745					750		
Trp	Gly	Leu	Phe	Asn	Asn	Arg	Leu	Thr	Gly	Ser	Phe	Asp	Tyr	Phe	Val

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

<400> 6398

[illegible]



<210> 6399  
 <211> 274  
 <212> PRT  
 <213> B.fragilis

<400> 6399

Lys Gln Ser Asn Met Arg Leu Ile Ile Gln Pro Asp Tyr Gln Ser Val  
 1 5 10 15  
 Ser Gln Trp Ala Ala His Tyr Val Ala Ala Lys Ile Lys Ala Ala Asn  
 20 25 30  
 Pro Thr Pro Glu Lys Pro Phe Val Leu Gly Cys Pro Thr Gly Ser Ser  
 35 40 45  
 Pro Leu Gly Met Tyr Lys Ala Leu Ile Asp Leu Asn Lys Lys Gly Ile  
 50 55 60  
 Val Ser Phe Gln Asn Val Val Thr Phe Asn Met Asp Glu Tyr Val Gly  
 65 70 75 80  
 Leu Pro Lys Glu His Pro Glu Ser Tyr Tyr Ser Phe Met Trp Asn Asn  
 85 90 95  
 Phe Phe Ser His Ile Asp Ile Lys Pro Glu Asn Thr Asn Ile Leu Asn  
 100 105 110  
 Gly Asn Ala Ala Asp Leu Asp Ala Glu Cys Ala Arg Tyr Glu Glu Lys  
 115 120 125  
 Ile Lys Ser Tyr Gly Gly Ile Asp Leu Phe Met Gly Gly Ile Gly Pro  
 130 135 140  
 Asp Gly His Ile Ala Phe Asn Glu Pro Gly Ser Ser Leu Ser Ser Arg  
 145 150 155 160  
 Thr Arg Gln Lys Thr Leu Thr Thr Asp Thr Ile Ile Ala Asn Ser Arg  
 165 170 175  
 Phe Phe Asp Asn Asp Ile Asn Lys Val Pro Lys Thr Ser Leu Thr Val  
 180 185 190  
 Gly Val Gly Thr Val Leu Ser Ala Arg Glu Val Met Ile Ile Val Asn  
 195 200 205  
 Gly His Asn Lys Ala Arg Ala Leu Tyr His Ala Val Glu Gly Ala Ile  
 210 215 220  
 Thr Gln Met Trp Thr Ile Ser Ala Leu Gln Met His Glu Lys Gly Ile  
 225 230 235 240  
 Ile Val Cys Asp Asp Ala Ala Thr Ala Glu Leu Lys Val Gly Thr Tyr  
 245 250 255  
 Arg Tyr Phe Lys Asp Ile Glu Ala Asp His Leu Asp Pro Gln Ser Leu  
 260 265 270  
 Leu Lys

<210> 6400  
 <211> 320  
 <212> PRT  
 <213> B.fragilis

<400> 6400

Ser Asn Ser Leu Tyr Phe Leu Trp Phe Ser Ser Phe Leu Cys Thr Leu  
 1 5 10 15  
 Phe Val Leu Leu Cys Arg Lys Ser Ile Ser Leu Gln Pro Asn Leu Thr  
 20 25 30  
 Leu Lys Gly Met Ser Tyr Asn Leu Lys Gly Lys Arg Gly Ile Ile  
 35 40 45  
 Phe Gly Ala Leu Asn Glu Gln Ser Ile Ala Trp Lys Val Ala Glu Arg  
 50 55 60  
 Ala Val Glu Glu Gly Ala Val Ile Thr Leu Ser Asn Thr Pro Val Ala  
 65 70 75 80

Val	Arg	Met	Gly	Gln	Val	Ser	Ala	Leu	Ser	Glu	Lys	Leu	Asn	Cys	Glu
			85						90				95		
Val	Ile	Ala	Ala	Asp	Ala	Thr	Asn	Val	Glu	Asp	Leu	Glu	Asn	Val	Phe
		100						105					110		
Lys	Arg	Ser	Met	Glu	Val	Leu	Gly	Gly	Gln	Ile	Asp	Phe	Val	Leu	His
		115					120					125			
Ser	Ile	Gly	Met	Ser	Pro	Asn	Val	Arg	Lys	Lys	Arg	Thr	Tyr	Asp	Asp
	130					135					140				
Leu	Asp	Tyr	Asn	Met	Leu	Asn	Thr	Thr	Leu	Asp	Val	Ser	Ala	Val	Ser
145					150					155					160
Phe	His	Lys	Met	Ile	Gln	Ala	Ala	Lys	Lys	Gln	Asn	Ala	Ile	Ala	Glu
			165					170						175	
Tyr	Gly	Ser	Ile	Val	Ala	Leu	Ser	Tyr	Val	Ala	Ala	Gln	Arg	Thr	Phe
		180						185					190		
Tyr	Gly	Tyr	Asn	Asp	Met	Ala	Asp	Ala	Lys	Ala	Leu	Leu	Glu	Ser	Ile
		195					200					205			
Ala	Arg	Ser	Phe	Gly	Tyr	Ile	Tyr	Gly	Arg	Glu	His	Asn	Val	Arg	Val
	210					215					220				
Asn	Thr	Ile	Ser	Gln	Ser	Pro	Thr	Phe	Thr	Thr	Ala	Gly	Ser	Gly	Val
225					230					235					240
Lys	Gly	Met	Asp	Lys	Leu	Tyr	Asp	Phe	Ala	Asn	Arg	Met	Ser	Pro	Leu
			245					250						255	
Gly	Asn	Ala	Ser	Ala	Asp	Glu	Cys	Ala	Asp	Tyr	Cys	Ile	Val	Met	Phe
		260						265					270		
Ser	Asp	Leu	Thr	Arg	Lys	Val	Thr	Met	Gln	Asn	Leu	Phe	His	Asp	Gly
	275						280					285			
Gly	Phe	Ser	Ser	Val	Gly	Met	Ser	Leu	Arg	Ala	Met	Ala	Thr	Tyr	Glu
	290					295					300				
Lys	Gly	Leu	Asp	Glu	Tyr	Lys	Asp	Glu	Asn	Gly	Asn	Ile	Ile	Tyr	Gly
305					310					315					320

&lt;210&gt; 6401

&lt;211&gt; 157

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6401

Leu	Ala	Ala	Leu	Arg	Thr	Cys	Gly	Leu	Met	Arg	Phe	Thr	Val	Ser	Met
1			5					10						15	
Leu	Trp	Glu	Met	Ile	Ser	Gly	Gln	Ala	Phe	Ile	Thr	Trp	Ser	Ile	Ser
		20					25						30		
Ser	Leu	Arg	Pro	Trp	Lys	Ser	Gly	Ile	Ser	Thr	Ser	Val	Val	Val	Ser
		35					40					45			
Gly	Phe	Ser	Arg	Leu	Ile	Ser	Arg	Ile	Val	Cys	Ala	Gln	Trp	Ala	Ala
	50					55				60					
Pro	Lys	Ser	Gly	Arg	Ser	Ser	Arg	Ser	Thr	Asp	Val	Ile	Thr	Ala	Cys
65					70					75				80	
Glu	Ser	Phe	Ile	Arg	Ala	Ile	Asp	Ser	Ala	Thr	Trp	Ala	Gly	Ser	Ser
			85					90						95	
Gly	Ser	Lys	Gly	Arg	Gly	Arg	Pro	Val	Trp	Val	Leu	Gln	Asn	Leu	Gln
		100						105					110		
Leu	Arg	Val	Gln	Met	Ser	Pro	Ala	Ile	Met	Asn	Val	Ala	Val	Pro	Phe
		115					120					125			
Pro	Gln	His	Ser	Pro	Met	Leu	Gly	Gln	Arg	Pro	Leu	Leu	Gln	Met	Val
	130					135					140				
Cys	Arg	Gln	Cys	Asp	Ser	Thr	Met	Arg	Leu	Val	Ser	Val			
145					150					155					

&lt;210&gt; 6402

<211> 369  
 <212> PRT  
 <213> B.fragilis

<400> 6402

His	Asn	Leu	Trp	Asn	Leu	Tyr	Lys	Lys	Thr	Phe	Arg	Met	Lys	Lys	Asn
1				5					10					15	
Ser	Phe	Glu	Thr	Gln	Ile	Leu	His	Thr	Pro	Phe	Glu	Lys	Glu	Asp	Ala
			20					25					30		
Tyr	His	Ser	Leu	Ser	Met	Pro	Val	Tyr	His	Thr	Ala	Ala	Tyr	Glu	Phe
			35				40					45			
Glu	Thr	Ala	Glu	Glu	Met	Glu	Ala	Ala	Phe	Cys	Gly	Gln	Lys	Ala	Gly
	50					55					60				
His	Ala	Tyr	Ser	Arg	Ile	Thr	Asn	Pro	Thr	Val	Gln	Tyr	Phe	Glu	Gln
65					70					75					80
Arg	Val	Gln	Arg	Val	Thr	Gly	Ala	Leu	Ser	Val	Thr	Ala	Leu	Asn	Ser
				85					90					95	
Gly	Met	Ala	Ala	Ile	Ser	Asn	Ala	Leu	Ile	Thr	Leu	Ala	Ser	Ala	Gly
			100					105					110		
Ala	Asn	Val	Val	Thr	Ser	Lys	His	Leu	Phe	Gly	Asn	Thr	Tyr	Ser	Phe
		115					120					125			
Leu	Lys	Ser	Thr	Leu	Glu	Ala	Phe	Gly	Val	Glu	Val	Arg	Phe	Cys	Asp
		130				135					140				
Leu	Thr	Cys	Pro	Glu	Glu	Val	Lys	Gln	Gln	Ile	Asp	Gly	Asp	Thr	Cys
145					150					155					160
Ala	Leu	Phe	Leu	Glu	Val	Ile	Thr	Asn	Pro	Gln	Leu	Glu	Val	Ala	Asp
				165					170					175	
Leu	Lys	Ala	Leu	Ala	Asp	Ile	Ala	His	Lys	Ala	Gly	Val	Pro	Leu	Leu
			180					185					190		
Ala	Asp	Thr	Thr	Ala	Ile	Pro	Phe	His	Val	Phe	His	Ala	Thr	Asp	Phe
		195					200					205			
Gly	Val	Asp	Ile	Glu	Ile	Val	Ser	Ser	Thr	Lys	Tyr	Ile	Ser	Gly	Gly
	210					215					220				
Ala	Thr	Cys	Ile	Gly	Gly	Leu	Ile	Ile	Asp	Tyr	Gly	Thr	Phe	Asp	Trp
225					230					235					240
Glu	His	Ser	Ala	Lys	Leu	Ala	Ala	Leu	Ser	Ala	Asp	Thr	Gly	Lys	Glu
				245					250					255	
Ala	Phe	Thr	Val	Lys	Leu	Arg	Lys	Glu	Val	His	Arg	Asn	Leu	Gly	Ala
			260					265					270		
Tyr	Met	Thr	Pro	Gln	Val	Ala	Tyr	Met	Gln	Thr	Leu	Gly	Leu	Glu	Thr
		275					280					285			
Met	Glu	Val	Arg	Phe	Ala	Arg	Gln	Ala	Glu	Thr	Cys	Leu	Lys	Leu	Ala
	290					295					300				
Gln	Cys	Leu	Gln	Glu	Leu	Pro	Glu	Ile	Glu	Ser	Val	Asn	Tyr	Thr	Gly
305					310					315					320
Leu	Glu	Ser	Asn	Pro	Phe	Tyr	Glu	Leu	Ser	Thr	Arg	Gln	Phe	Gly	Ser
				325					330					335	
Leu	Pro	Gly	Ala	Met	Leu	Thr	Phe	Asp	Leu	Pro	Ser	Arg	Glu	Ile	Cys
			340					345					350		
Phe	Arg	Phe	Ile	Asn	Arg	Leu	Arg	Phe	Ile	Arg	Lys	Gly	Asn	Asp	Phe
		355					360					365			

Ile

<210> 6403  
 <211> 66  
 <212> PRT  
 <213> B.fragilis

&lt;400&gt; 6403

Ser Val Ala Leu Glu Gly Ile Phe Ala Met Ala Asp Gln Thr Phe Leu  
 1 5 10 15  
 Ile Glu Lys Ala Ser Thr Asp Asn Ile Leu Ser Phe Ile Cys Ala Thr  
 20 25 30  
 Thr Asp Ala Lys Ile Val Ile His Gly Arg Asn Pro Ile Phe Ile His  
 35 40 45  
 Phe Leu Lys Pro Val Gly Ile Cys Ile Arg Ser Arg Ile Val Val Pro  
 50 55 60  
 Ser Ala  
 65

&lt;210&gt; 6404

&lt;211&gt; 374

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6404

Lys His Met Gly Asn Lys Gly Val Leu Ser Ser Ala Phe Asn Met Ser  
 1 5 10 15  
 Leu Gly Phe Ile Pro Val Ile Val Ser Ile Leu Leu Cys Glu Phe Ile  
 20 25 30  
 Thr Gln Asp Ile Ser Ile Tyr Ile Gly Thr Gly Ile Gly Leu Ile Tyr  
 35 40 45  
 Ser Tyr Arg Ser Leu Ser Arg Lys Gly Ala Arg Ile Pro Asn Phe Ile  
 50 55 60  
 Leu Tyr Ile Ser Thr Gly Ile Leu Thr Leu Leu Thr Leu Ala Ser Phe  
 65 70 75 80  
 Ile Pro Gly Asp Phe Val Pro Glu Gly Ala Leu Pro Leu Thr Leu Glu  
 85 90 95  
 Val Ser Ile Leu Ile Pro Met Val Ile Leu Phe Leu His Arg Arg Lys  
 100 105 110  
 Phe Ile Ser His Tyr Leu Arg Gln Asn Ala Gln Cys Asn Arg Arg Leu  
 115 120 125  
 Phe Ala Gln Gly Ala Glu Ser Ala Ile Val Ser Ala Arg Val Val Leu  
 130 135 140  
 Ile Leu Gly Ile Leu His Phe Ala Val Ile Ser Leu Thr Val Leu Val  
 145 150 155 160  
 Ala His Pro Leu Thr Arg Thr Ser Ile Leu Val Leu Tyr His Val Leu  
 165 170 175  
 Pro Pro Thr Ile Phe Ile Leu Ser Ile Leu Leu Asn Gln Ile Gly Ile  
 180 185 190  
 Arg Tyr Phe Asn His Val Met Ala His Thr Glu Tyr Val Pro Ile Val  
 195 200 205  
 Asn Thr Arg Gly Asp Val Ile Gly Lys Ser Leu Ala Val Glu Ala Ile  
 210 215 220  
 Asn Tyr Lys Asn Ala Tyr Ile Asn Pro Val Ile Arg Ile Ala Val Ser  
 225 230 235 240  
 Thr His Gly Met Leu Phe Leu Cys Asn Arg Pro Gln Ser Cys Ile Leu  
 245 250 255  
 Asp Lys Gly Lys Val Asp Ile Pro Met Glu Cys Tyr Leu Arg Tyr Gly  
 260 265 270  
 Glu Thr Leu Thr Ala Gly Ala Asn Arg Leu Leu Ser Asn Ala Phe Pro  
 275 280 285  
 Lys Ala Ser Asp Leu Lys Pro Thr Phe Thr Ile Ser Tyr His Phe Glu  
 290 295 300  
 Asn Glu Gln Thr Asn Arg Leu Val Tyr Leu Phe Ile Val Asp Met Glu  
 305 310 315 320  
 Asp Asp Ser Ile Leu Cys Asp Pro Arg Phe Lys Gly Gly Lys Leu Trp

				325					330					335	
Thr	Phe	Gln	Gln	Ile	Glu	His	Asn	Leu	Gly	Thr	His	Phe	Phe	Ser	Glu
				340				345					350		
Cys	Phe	Glu	Leu	Glu	Tyr	Glu	His	Leu	Lys	Gln	Val	Ile	Gly	Ile	Arg
		355					360					365			
Glu	Lys	Tyr	Lys	Val	Ser										
	370														

&lt;210&gt; 6405

&lt;211&gt; 673

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6405

Asn	Ile	Ser	Gly	Ser	Ser	Asp	Val	Glu	Phe	Thr	Ile	Asp	Thr	Gly	Asn
1				5				10						15	
Lys	Glu	Phe	Gln	Asp	Ala	Leu	Asn	Leu	Ile	Gln	Tyr	Thr	Arg	Gln	Ser
			20					25					30		
Val	Phe	Leu	Thr	Gly	Lys	Ala	Gly	Thr	Gly	Lys	Ser	Thr	Phe	Leu	Lys
		35					40					45			
Tyr	Ile	Cys	Lys	Asn	Thr	Lys	Lys	Lys	His	Ile	Val	Leu	Ala	Pro	Thr
	50					55					60				
Gly	Ile	Ala	Ala	Ile	Asn	Ala	Gly	Gly	Ser	Thr	Leu	His	Ser	Phe	Phe
65					70					75					80
Lys	Leu	Pro	Phe	His	Pro	Leu	Leu	Pro	Asp	Asp	Pro	Asn	Leu	Ser	Leu
				85					90					95	
Gln	Arg	Gly	Arg	Ile	His	Glu	Phe	Phe	Lys	Tyr	Thr	Lys	Pro	His	Arg
			100					105					110		
Lys	Leu	Leu	Glu	Gln	Val	Glu	Leu	Val	Ile	Ile	Asp	Glu	Ile	Ser	Met
		115					120					125			
Val	Arg	Ala	Asp	Met	Ile	Asp	Ala	Val	Asp	Arg	Ile	Leu	Arg	Val	Tyr
	130					135					140				
Ser	Arg	Asn	Leu	Arg	Asp	Pro	Phe	Gly	Gly	Lys	Gln	Val	Leu	Leu	Val
145					150					155					160
Gly	Asp	Val	Phe	Gln	Leu	Glu	Pro	Val	Ile	Lys	Gly	Asp	Glu	Arg	Glu
				165					170					175	
Ile	Ile	Asn	Arg	Phe	Tyr	Pro	Thr	Pro	Tyr	Phe	Phe	Ser	Ala	Arg	Val
		180						185					190		
Phe	Asn	Glu	Ile	Glu	Leu	Val	Ser	Ile	Glu	Leu	Gln	Lys	Val	Tyr	Arg
	195						200					205			
Gln	Ser	Asp	Ala	Val	Phe	Val	Ser	Val	Leu	Asp	His	Ile	Arg	Ser	Gly
	210					215					220				
Ala	Ala	Gly	Ala	Ala	Asp	Leu	Gln	Leu	Leu	Asn	Thr	Arg	Tyr	Gly	Ala
225					230					235					240
Gln	Ile	Asp	Ala	Ser	Glu	Glu	Asp	Leu	Tyr	Ile	Thr	Leu	Ala	Thr	Arg
				245					250					255	
Arg	Asp	Thr	Val	Glu	Thr	Ile	Asn	Glu	Arg	Lys	Leu	Thr	Glu	Leu	Pro
			260					265					270		
Gly	Asp	Pro	Val	Val	Phe	Glu	Gly	Glu	Ile	Asn	Gly	Asp	Phe	Pro	Glu
	275						280					285			
Ser	Ser	Leu	Pro	Thr	Ser	Lys	Glu	Leu	Thr	Leu	Lys	Pro	Gly	Ala	Gln
	290					295					300				
Ile	Ile	Phe	Ile	Lys	Asn	Asp	Phe	Glu	Arg	Arg	Trp	Val	Asn	Gly	Thr
305					310					315					320
Ile	Gly	Val	Val	Ser	Gly	Ile	Asp	Asn	Asp	Gly	Ile	Ile	Tyr	Val	Ile
				325					330					335	
Thr	Asp	Asp	Gly	Lys	Glu	Cys	Asp	Val	His	Arg	Glu	Ser	Trp	Arg	Asn
			340					345					350		
Ile	Arg	Tyr	Lys	Tyr	Asn	Glu	Glu	Lys	Lys	Glu	Ile	Glu	Glu	Glu	Glu

355 360 365  
 Leu Gly Thr Phe Thr Gln Tyr Pro Ile Arg Leu Ala Trp Ala Ile Thr  
 370 375 380  
 Val His Lys Ser Gln Gly Leu Thr Phe Ser Arg Val Val Ile Asp Phe  
 385 390 395 400  
 Thr Gly Gly Val Phe Ala Gly Gly Gln Ala Tyr Val Ala Leu Ser Arg  
 405 410 415  
 Cys Thr Ser Leu Glu Gly Ile Gln Leu Lys Lys Pro Ile Ser Arg Ala  
 420 425 430  
 Asp Ile Phe Val Arg Pro Glu Ile Val Ser Phe Ser Gly Arg Phe Asn  
 435 440 445  
 Asn Arg Gln Ala Ile Asp Lys Ala Leu Lys Gln Ala Gln Ala Asp Val  
 450 455 460  
 Gln Tyr Ala Ala Ala Ala Arg Ala Phe Asp Lys Gly Asp Phe Glu Thr  
 465 470 475 480  
 Cys Leu Glu Gln Phe Phe Leu Ala Ile His Ser Arg Tyr Asp Ile Glu  
 485 490 495  
 Lys Pro Ala Ala Arg Arg Leu Ile Arg Arg Lys Leu Gly Val Val Asn  
 500 505 510  
 Leu Leu Arg Glu Gln Lys Arg Lys Leu Gln Ala Gln Met Glu Ala Gln  
 515 520 525  
 Lys Lys Ser Leu Gln Lys Tyr Ala Arg Glu Tyr Leu Leu Met Gly Asn  
 530 535 540  
 Glu Cys Ile Thr Gln Ala His Asp Val Arg Ala Ala Leu Ala Asn Tyr  
 545 550 555 560  
 Asp Lys Ala Ile Glu Leu Tyr Pro Glu Tyr Ile Asp Ala Trp Ile Arg  
 565 570 575  
 Lys Gly Ile Thr Leu Phe Asn Glu Lys Glu Phe Phe Asp Ala Glu Asn  
 580 585 590  
 Cys Leu Asn Arg Ala Val Ser Leu Arg Pro Ser Glu Phe Lys Ala Leu  
 595 600 605  
 Tyr Asn Arg Gly Lys Leu Arg Leu Gln Thr Glu Asn Ile Glu Gly Ala  
 610 615 620  
 Leu Ser Asp Leu Asp Lys Ala Thr Ser Leu Lys Pro Glu His Pro Gly  
 625 630 635 640  
 Ala His Glu Leu Phe Gly Asp Thr Leu Leu Lys Val Gly Lys Glu Thr  
 645 650 655  
 Glu Ala Ala Ile Gln Trp Arg Ile Ala Glu Glu Leu Arg Lys Lys Lys  
 660 665 670  
 Lys

&lt;210&gt; 6406

&lt;211&gt; 207

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6406

Gln Thr Ile Met Ile Leu Lys Leu Tyr Glu Lys Asn Asn Asn Pro Gln  
 1 5 10 15  
 Asp Leu Gln Arg Ile Val Asp Leu Leu Asn Asp Gly Gly Leu Ile Ile  
 20 25 30  
 Tyr Pro Thr Asp Thr Met Tyr Ala Ile Gly Cys His Gly Leu Lys Glu  
 35 40 45  
 Arg Ala Ile Glu Arg Ile Cys Arg Ile Lys Glu Ile Asp Pro Lys Lys  
 50 55 60  
 Asn Asn Leu Ser Ile Ile Cys Tyr Asp Leu Ser Ser Ile Ser Glu Tyr  
 65 70 75 80  
 Ala Lys Val Asp Asn Asn Ile Phe Lys Leu Met Lys Arg Asn Leu Pro

				85				90					95				
Gly	Pro	Phe	Thr	Phe	Ile	Leu	Asn	Gly	Thr	Asn	Arg	Leu	Pro	Lys	Ile		
			100					105					110				
Phe	Arg	Asn	Arg	Lys	Glu	Val	Gly	Ile	Arg	Met	Pro	Asp	Asn	Ser	Ile		
		115					120					125					
Ile	Arg	Glu	Ile	Ala	Arg	Leu	Leu	Asp	Ala	Pro	Ile	Met	Thr	Thr	Thr		
	130					135					140						
Leu	Pro	His	Asp	Glu	His	Glu	Asp	Ile	Glu	Tyr	Val	Thr	Asp	Pro	Glu		
145					150					155					160		
Leu	Ile	Asp	Glu	Lys	Leu	Gly	Asp	Val	Val	Asp	Leu	Val	Ile	Asp	Gly		
			165					170						175			
Gly	Ile	Gly	Gly	Ile	Glu	Pro	Ser	Thr	Val	Val	Asn	Cys	Thr	Glu	Gly		
		180						185					190				
Glu	Ala	Ala	Ile	Val	Arg	Gln	Gly	Lys	Gly	Glu	Leu	Glu	Glu	Ala			
	195					200						205					

&lt;210&gt; 6407

&lt;211&gt; 144

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6407

His	Leu	Ile	Met	Lys	Lys	Val	Leu	Phe	Phe	Ala	Leu	Val	Leu	Thr	Ile		
1				5				10					15				
Ala	Thr	Ala	Cys	Ser	Gln	Thr	Lys	Asp	Ser	Tyr	Leu	Glu	Gly	Phe	Lys		
		20						25				30					
Leu	Phe	Ile	Glu	Ser	Val	Gln	Lys	Asn	Ala	Gln	Asp	Tyr	Thr	Lys	Ala		
	35					40					45						
Asp	Trp	Glu	Lys	Ala	Asp	Glu	Gln	Phe	Thr	Lys	Leu	Lys	Asp	Ser	Tyr		
50					55						60						
Asn	Asn	Phe	Ser	Lys	Gln	Met	Thr	Ser	Asp	Glu	Lys	Gly	Glu	Val	Ile		
65				70					75					80			
Lys	Leu	Glu	Ser	Thr	Tyr	Ala	Ala	Leu	Lys	Leu	Lys	Lys	Ile	Gly	Asp		
			85					90					95				
Asp	Val	Lys	Glu	Ser	Thr	Lys	Asp	Ala	Phe	Glu	Lys	Val	Lys	Asp	Thr		
	100						105						110				
Ala	Lys	Asp	Ala	Ala	Lys	Asp	Val	Lys	Glu	Gly	Ala	Gln	Lys	Ala	Ala		
	115					120						125					
Lys	Lys	Gly	Glu	Lys	Ala	Met	Glu	Gly	Ile	Lys	Asp	Gly	Leu	Lys	Asp		
	130					135					140						

&lt;210&gt; 6408

&lt;211&gt; 745

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6408

Lys	Gln	Pro	Ile	Lys	Ser	Ser	Lys	Pro	Met	Lys	Arg	Lys	Phe	Ile	Phe		
1				5				10					15				
Leu	Phe	Phe	Cys	Leu	Cys	Cys	Leu	Ala	Gly	Phe	Ala	Gln	Gly	Gly	Lys		
	20							25				30					
Ala	Leu	Asp	Leu	Lys	Glu	Ile	Asn	Ser	Gly	Lys	Phe	Ser	Pro	Glu	Asn		
	35					40						45					
Ile	Tyr	Gly	Val	Val	Pro	Met	Pro	Asp	Gly	Glu	His	Tyr	Thr	Gln	Arg		
50					55						60						
Asn	Ala	Glu	Gly	Thr	Gln	Ile	Val	Lys	Tyr	Ser	Phe	Arg	Thr	Gly	Glu		
65				70					75					80			
Pro	Val	Glu	Val	Val	Phe	Asp	Val	Thr	Lys	Ala	Arg	Glu	Cys	Pro	Phe		
			85					90						95			

Lys Lys Phe Asp Ser Tyr Gln Phe Ser Pro Asp Gly Ser Lys Ile Leu  
 100 105 110  
 Ile Ala Thr Glu Thr Lys Pro Ile Tyr Arg His Ser Tyr Thr Ala Val  
 115 120 125  
 His Tyr Leu Tyr Pro Val Lys Arg Asn Asp Lys Gly Val Thr Thr Asn  
 130 135 140  
 Asn Ile Val Glu Lys Leu Ser Asp Gly Gly Pro Gln Gln Ala Pro Val  
 145 150 155 160  
 Phe Ser Pro Asp Gly Asn Leu Val Ala Phe Val Arg Asp Asn Asn Ile  
 165 170 175  
 Phe Leu Val Lys Leu Leu Tyr Gly Asn Ser Glu Ser Gln Val Thr Glu  
 180 185 190  
 Asp Gly Lys Leu Asn Ser Val Leu Asn Gly Ile Pro Asp Trp Val Tyr  
 195 200 205  
 Glu Glu Glu Phe Gly Phe Asn Arg Ala Leu Glu Phe Asn Ala Asp Asn  
 210 215 220  
 Thr Met Leu Ala Tyr Val Arg Phe Asp Glu Ser Glu Val Pro Ser Tyr  
 225 230 235 240  
 Thr Phe Pro Leu Phe Ala Gly Glu Ala Pro Arg Tyr Asp Ala Leu Gln  
 245 250 255  
 Asp Tyr Pro Gly Glu Tyr Thr Tyr Lys Tyr Pro Lys Ala Gly Tyr Pro  
 260 265 270  
 Asn Ser Lys Val Ser Val His Thr Phe Asp Ile Lys Ser Lys Val Thr  
 275 280 285  
 Arg Gln Val Lys Leu Pro Ile Asp Ala Asp Gly Tyr Ile Pro Arg Ile  
 290 295 300  
 Arg Phe Thr Gln Asp Pro Asn Lys Leu Ala Ile Met Thr Leu Asn Arg  
 305 310 315 320  
 His Gln Asn Arg Phe Asp Met Tyr Phe Ala Asp Pro Arg Ser Thr Val  
 325 330 335  
 Cys Lys Leu Ala Leu Arg Asp Glu Ser Pro Tyr Tyr Ile Asn Glu Asn  
 340 345 350  
 Val Phe Asp Asn Ile Gln Phe Tyr Pro Glu Tyr Phe Ser Phe Val Ser  
 355 360 365  
 Asp Lys Ser Gly Tyr Pro His Leu Tyr Trp Tyr Ser Met Asn Gly Asn  
 370 375 380  
 Leu Ile Lys Gln Val Thr Ser Gly Asn Tyr Glu Val Lys Asn Phe Ile  
 385 390 395 400  
 Gly Trp Asn Pro Asp Thr Asn Glu Phe Tyr Tyr Thr Ser Asn Glu Glu  
 405 410 415  
 Ser Pro Met Arg Gln Ala Val Tyr Lys Ile Asp Arg Lys Gly Lys Lys  
 420 425 430  
 Met Lys Leu Ser Asn Gln Pro Gly Thr Asn Ser Pro Ile Phe Ser Ser  
 435 440 445  
 Ser Met Lys Tyr Phe Met Asn Lys Phe Thr Ser Leu Asp Thr Pro Met  
 450 455 460  
 Leu Ile Thr Leu Asn Asp Asn Thr Gly Lys Val Leu Lys Thr Leu Val  
 465 470 475 480  
 Thr Asn Asp Lys Leu Lys Gln Lys Leu Ala Glu Tyr Ala Ile Pro Gln  
 485 490 495  
 Lys Glu Phe Phe Thr Phe Lys Thr Thr Glu Gly Val Asp Leu Asn Gly  
 500 505 510  
 Trp Met Met Lys Pro Val Asn Phe Asp Pro Ala Lys Arg Tyr Pro Val  
 515 520 525  
 Leu Met Phe Gln Tyr Ser Gly Pro Gly Ser Gln Gln Val Leu Asp Lys  
 530 535 540  
 Trp Gly Ile Ser Trp Glu Thr Tyr Met Ala Ser Leu Gly Tyr Val Val  
 545 550 555 560  
 Ala Cys Val Asp Gly Arg Gly Thr Gly Gly Arg Gly Ser Glu Phe Gln



1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes the need for transparency and accountability in financial reporting.

2. The second part of the document outlines the various methods and techniques used to collect and analyze data. It includes a detailed description of the experimental setup and the procedures followed during the study.

3. The third part of the document presents the results of the study, showing the data collected and the analysis performed. It includes tables and graphs to illustrate the findings.

4. The fourth part of the document discusses the implications of the results and the conclusions drawn from the study. It highlights the significance of the findings and their potential applications.

5. The fifth part of the document provides a summary of the key points discussed throughout the document. It reiterates the main findings and the conclusions reached.

<211> 281

&lt;212&gt; PRT

<213> B.fragilis

<400> 6409

Asn	Met	Asp	Ile	His	Pro	Ile	Gln	Glu	Ser	Ser	Arg	Arg	Trp	Met	Thr
1				5					10					15	
Ala	Leu	Ile	Leu	Ala	Val	Val	Ala	Ala	Gly	Ile	Gln	Thr	Thr	Leu	Leu
			20					25					30		
Trp	Gly	Tyr	Ala	Gly	Ala	Asp	Thr	Leu	Pro	Ala	Ala	Ile	Asp	Gly	Ile
		35					40					45			
Leu	Ser	Val	Gly	Leu	Leu	Cys	Leu	Leu	Ala	Tyr	Leu	Ala	Trp	Tyr	Val
	50					55				60					
Ile	Gly	Leu	Val	Ser	Ile	Leu	Gln	Thr	Asp	Leu	Leu	Ile	Ala	Ala	Leu
65					70					75					80
Ala	Leu	Leu	Phe	Trp	Leu	Ala	Gly	Gly	Phe	Ala	Val	Gln	Tyr	Val	Leu
				85					90					95	
Glu	Gln	Asn	Met	Gly	Gln	Val	Tyr	Ala	Pro	Phe	Gly	Glu	Thr	Leu	Pro
			100					105					110		
Phe	Arg	Ile	Leu	Phe	Gly	Ala	Leu	Ala	Trp	Gly	Val	Met	Met	Leu	Trp
		115					120					125			
Tyr	Arg	Leu	Gln	Ser	Leu	Asn	Thr	Val	Gln	Glu	Glu	Ile	Leu	Glu	Glu
	130					135					140				
Ala	Val	Ser	Arg	Glu	Glu	Ala	Leu	Arg	Glu	Glu	Leu	Arg	Gln	Ile	Glu
145					150					155					160
Cys	Arg	Glu	Asp	Lys	Ala	Leu	Pro	Glu	Glu	Ala	Glu	Cys	Ile	Asp	Arg
				165					170					175	
Ile	Thr	Val	Lys	Asp	Gly	Thr	His	Ile	His	Leu	Ile	Arg	Thr	Asp	Glu
			180					185					190		
Leu	Leu	Tyr	Ile	Gln	Ala	Cys	Gly	Asp	Tyr	Val	Thr	Leu	Val	Thr	Pro
		195					200					205			
Ser	Gly	Gln	Tyr	Val	Lys	Glu	Gln	Thr	Met	Lys	Tyr	Phe	Asp	Ala	His
	210					215				220					
Leu	Pro	Ser	Ala	Gly	Phe	Val	Arg	Val	His	Arg	Ser	Thr	Ile	Val	Asn

225		230		235		240
Val Thr Gln Ile	Ser Arg Val Glu Leu Phe Gly Lys Glu Asn Tyr Gln					
	245		250		255	
Leu Ser Leu Lys	Asn Gly Val Arg Leu Lys Val Ser Asn Ser Gly Tyr					
	260		265		270	
Lys Leu Leu Lys	Glu Arg Leu Glu Leu					
	275		280			

&lt;210&gt; 6410

&lt;211&gt; 402

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6410

Lys Lys Arg Met	Glu Gln Lys Thr Arg Ile Lys Gly Asn Val His Tyr
1	5 10 15
Val Gly Val Asn Asp Arg Asn Lys His Leu Phe Glu Gly Met Trp Pro	
	20 25 30
Leu Pro Tyr Gly Val Ser Tyr Asn Ser Tyr Leu Ile Asp Asp Glu Met	
	35 40 45
Val Ala Leu Ile Asp Thr Val Asp Ile Cys Tyr Phe Glu Val Tyr Leu	
	50 55 60
Arg Lys Ile Arg Asn Ile Ile Gly Asp Arg Pro Ile Asn Tyr Leu Ile	
	65 70 75 80
Ile Asn His Met Glu Pro Asp His Ser Gly Ser Ile Arg Leu Ile Lys	
	85 90 95
Gln His Tyr Pro Asp Ile Val Ile Val Gly Asn Lys Gln Thr Phe Gly	
	100 105 110
Met Ile Glu Gly Phe Tyr Gly Val Thr Gly Glu Gln Tyr Leu Ile Lys	
	115 120 125
Asp Gly Asp Phe Leu Ala Leu Gly Arg His Lys Leu Arg Phe Tyr Leu	
	130 135 140
Thr Pro Met Val His Trp Pro Glu Thr Met Met Thr Phe Asp Glu Thr	
	145 150 155 160
Asp Gly Ile Leu Phe Ser Gly Asp Gly Phe Gly Cys Phe Gly Thr Leu	
	165 170 175
Asp Gly Gly Phe Val Asp Thr Arg Met Asn Ile Asp His Tyr Trp Gly	
	180 185 190
Glu Met Val Arg Tyr Tyr Ser Asn Ile Val Gly Lys Tyr Gly Ser Pro	
	195 200 205
Val Gln Lys Ala Leu Gln Lys Leu Gly Gly Leu Pro Ile Ser Ala Ile	
	210 215 220
Cys Ser Thr His Gly Pro Val Trp Thr Glu Asn Ile Thr Lys Val Val	
	225 230 235 240
Gly Ile Tyr Asp Lys Leu Ser Arg Tyr Asp Ala Asp Glu Gly Val Val	
	245 250 255
Ile Ala Tyr Gly Ser Met Tyr Gly Asn Thr Glu Gln Met Ala Glu Ala	
	260 265 270
Ile Ala Ala Glu Leu Ser Ala Gln Gly Ile Lys Asn Ile Val Met His	
	275 280 285
Asn Val Ser Lys Ser Asn Pro Ser Tyr Ile Leu Ala Asp Ile Phe Arg	
	290 295 300
Tyr Lys Gly Leu Ile Ile Gly Ser Pro Thr Tyr Ser Asn Gln Ile Phe	
	305 310 315 320
Pro Glu Val Glu Ser Leu Leu Ser Lys Ile Leu Val Arg Glu Leu Lys	
	325 330 335
Gly Arg Tyr Leu Gly Tyr Phe Gly Ser Phe Thr Trp Ala Gly Ala Ala	
	340 345 350
Val Lys Arg Met Ala Glu Phe Ala Glu Lys Ser Lys Phe Glu Leu Val	

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65  
66  
67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82  
83  
84  
85  
86  
87  
88  
89  
90  
91  
92  
93  
94  
95  
96  
97  
98  
99  
100  
101  
102  
103  
104  
105  
106  
107  
108  
109  
110  
111  
112  
113  
114  
115  
116  
117  
118  
119  
120  
121  
122  
123  
124  
125  
126  
127  
128  
129  
130  
131  
132  
133  
134  
135  
136  
137  
138  
139  
140  
141  
142  
143  
144  
145  
146  
147  
148  
149  
150  
151  
152  
153  
154  
155  
156  
157  
158  
159  
160  
161  
162  
163  
164  
165  
166  
167  
168  
169  
170  
171  
172  
173  
174  
175  
176  
177  
178  
179  
180  
181  
182  
183  
184  
185  
186  
187  
188  
189  
190  
191  
192  
193  
194  
195  
196  
197  
198  
199  
200  
201  
202  
203  
204  
205  
206  
207  
208  
209  
210  
211  
212  
213  
214  
215  
216  
217  
218  
219  
220  
221  
222  
223  
224  
225  
226  
227  
228  
229  
230  
231  
232  
233  
234  
235  
236  
237  
238  
239  
240  
241  
242  
243  
244  
245  
246  
247  
248  
249  
250  
251  
252  
253  
254  
255  
256  
257  
258  
259  
260  
261  
262  
263  
264  
265  
266  
267  
268  
269  
270  
271  
272  
273  
274  
275  
276  
277  
278  
279  
280  
281  
282  
283  
284  
285  
286  
287  
288  
289  
290  
291  
292  
293  
294  
295  
296  
297  
298  
299  
300  
301  
302  
303  
304  
305  
306  
307  
308  
309  
310  
311  
312  
313  
314  
315  
316  
317  
318  
319  
320  
321  
322  
323  
324  
325  
326  
327  
328  
329  
330  
331  
332  
333  
334  
335  
336  
337  
338  
339  
340  
341  
342  
343  
344  
345  
346  
347  
348  
349  
350  
351  
352  
353  
354  
355  
356  
357  
358  
359  
360  
361  
362  
363  
364  
365  
366  
367  
368  
369  
370  
371  
372  
373  
374  
375  
376  
377  
378  
379  
380  
381  
382  
383  
384  
385  
386  
387  
388  
389  
390  
391  
392  
393  
394  
395  
396  
397  
398  
399  
400

	355		360		365										
Gly	Asp	Pro	Val	Glu	Met	Lys	Gln	Ala	Met	Lys	Glu	Ile	Thr	Tyr	Gln
	370					375					380				
Gln	Cys	Glu	Asn	Leu	Ala	Arg	Ala	Met	Ala	Gly	Arg	Leu	Lys	Lys	Asp
385					390					395					400
Arg	Val														

<210> 6411  
 <211> 292  
 <212> PRT  
 <213> B.fragilis

<400> 6411

Gln	Thr	Ala	Val	Lys	Ile	Tyr	His	His	Cys	Gly	Ile	Gln	Leu	Leu	Tyr
1				5					10					15	
Ile	Arg	Leu	Phe	Gln	Tyr	Ile	Cys	Ala	Pro	Leu	Lys	Lys	Arg	Arg	Met
		20						25					30		
Ile	Lys	Ala	Leu	Phe	Phe	Asp	Ile	Asp	Gly	Thr	Leu	Val	Ser	Phe	Asn
		35				40						45			
Thr	His	Glu	Ile	Pro	Ser	Ser	Thr	Leu	Ala	Ala	Ile	Ala	Glu	Ala	Lys
	50					55					60				
Ala	Lys	Gly	Ile	Lys	Ile	Phe	Ile	Ala	Thr	Gly	Arg	Pro	Lys	Ala	Ile
65				70					75						80
Ile	Asn	Asn	Leu	Thr	Ala	Leu	Gln	Glu	Arg	Glu	Leu	Ile	Asp	Gly	Tyr
			85					90					95		
Ile	Thr	Met	Asn	Gly	Gly	Tyr	Cys	Phe	Val	Gly	Asp	Glu	Val	Ile	Tyr
		100						105					110		
Lys	His	Ser	Ile	Pro	Val	Gln	Asp	Val	Lys	Ala	Leu	Ala	Ala	Leu	Ser
		115				120						125			
Asp	Glu	Arg	Asn	Phe	Pro	Cys	Ile	Phe	Val	Ala	Glu	His	Thr	Val	Ala
	130					135					140				
Val	Cys	Asn	Thr	Asn	Lys	Leu	Val	Asn	Glu	Ile	Phe	His	Asp	Phe	Leu
145				150					155					160	
His	Val	Asp	Ile	Leu	Pro	Ile	Gln	Thr	Thr	Ala	Glu	Ala	Thr	Gln	Pro
			165					170						175	
Glu	Ile	Phe	Gln	Met	Thr	Pro	Phe	Ile	Thr	Thr	Glu	Glu	Glu	Lys	Thr
		180					185						190		
Val	Leu	Pro	Leu	Leu	Pro	Asn	Cys	Glu	Ser	Gly	Arg	Trp	Phe	Pro	Ala
		195				200						205			
Phe	Thr	Asp	Ile	Val	Ala	Lys	Gly	Ile	Arg	Lys	Gln	Lys	Gly	Ile	Asp
	210					215					220				
Glu	Ile	Ile	Arg	His	Phe	Gly	Ile	Gly	Gln	Glu	Glu	Thr	Met	Ala	Phe
225				230					235					240	
Gly	Asp	Gly	Gly	Asn	Asp	Ile	Ser	Met	Leu	Arg	His	Ala	Ala	Ile	Gly
			245					250					255		
Val	Ala	Met	Gly	Asn	Ala	Asn	Asp	Asp	Val	Lys	Glu	Thr	Ala	Asp	Tyr
		260				265						270			
Ile	Thr	Thr	Ser	Val	Asp	Glu	Asp	Gly	Ile	Gln	Lys	Ala	Leu	Lys	His
		275				280						285			
Phe	Gly	Ile	Ile												
	290														

<210> 6412  
 <211> 204  
 <212> PRT  
 <213> B.fragilis

<400> 6412

Lys Ala Lys Phe Ile Ile Tyr Lys Leu Tyr Thr Met Leu Pro Lys Lys  
 1 5 10 15  
 Lys Asn Leu Glu Glu Glu Arg Ala Lys His Thr Val Asp Ser Leu Tyr  
 20 25 30  
 Lys Asp Tyr Val Asp Asp Leu Phe Ser Tyr Ala Leu Gly Phe Gly Phe  
 35 40 45  
 Asp Lys Gln Thr Ala Met Asp Ala Ile His Asp Val Phe Cys Arg Val  
 50 55 60  
 Cys Ile Arg Glu Arg Glu Val Gln Glu Ile Gln Asn Pro Lys Phe Tyr  
 65 70 75 80  
 Leu Leu Arg Ala Leu Arg Asn Gln Leu Ile Asp Thr Tyr Lys Leu Lys  
 85 90 95  
 Arg Asn Tyr Ser Glu Val Leu Thr Gly Glu Ile Thr Asp Glu Leu Pro  
 100 105 110  
 Tyr Lys Ile Lys Ile Thr Val Glu Asp Glu Ile Ile Ala Ala Glu Glu  
 115 120 125  
 Gln Ala Glu Val Ser Gln Lys Val Asp Glu Ile Leu Ser Ile Leu Thr  
 130 135 140  
 Glu Arg Gln Arg Glu Ile Ile Tyr Leu Arg Tyr Met Gln Glu Cys Ser  
 145 150 155 160  
 Tyr Glu Glu Ile Ala Glu Ile Met Gln Ile Ser Val Pro Ala Cys Arg  
 165 170 175  
 Lys Leu Leu Tyr Arg Thr Leu Leu Lys Leu Lys His Asn Asn Thr Leu  
 180 185 190  
 Val Leu Phe Tyr Leu Leu Leu Ser Ile Asn Val Gly  
 195 200

<210> 6413  
 <211> 245  
 <212> PRT  
 <213> B.fragilis

<400> 6413  
 Ser Val Lys Phe Gln Leu Leu Asn Thr Leu Phe Met Asp Thr Ala Leu  
 1 5 10 15  
 Tyr Leu Leu Pro Val Thr Leu Gly Asp Thr Pro Ile Glu Ser Val Leu  
 20 25 30  
 Pro Ser Tyr Asn Lys Glu Ile Ile Gln Gly Ile Lys His Phe Ile Val  
 35 40 45  
 Glu Asp Val Arg Ser Ala Arg Arg Phe Leu Lys Lys Val Asp Arg Glu  
 50 55 60  
 Ile Asp Ile Asp Ser Leu Thr Phe Tyr Pro Leu Asn Lys His Thr Ser  
 65 70 75 80  
 Pro Glu Asp Ile Ser Gly Tyr Leu Lys Pro Leu Ala Gly Gly Leu Ser  
 85 90 95  
 Met Gly Val Ile Ser Glu Ala Gly Cys Pro Ala Val Ala Asp Pro Gly  
 100 105 110  
 Ala Asp Val Val Ala Ile Ala Gln Arg Lys Asn Leu Lys Val Val Pro  
 115 120 125  
 Leu Val Gly Pro Ser Ser Ile Ile Leu Ser Val Met Gly Ser Gly Phe  
 130 135 140  
 Asn Gly Gln Ser Phe Ala Phe His Gly Tyr Leu Pro Ile Glu Pro Gly  
 145 150 155 160  
 Glu Arg Ala Lys Lys Ile Lys Ala Leu Glu Gln Arg Val Tyr Ala Glu  
 165 170 175  
 His Gln Thr Gln Leu Phe Ile Glu Thr Pro Tyr Arg Asn Asn Lys Met  
 180 185 190  
 Val Glu Asp Ile Leu His Asn Cys Arg Pro Gln Thr Arg Leu Cys Ile  
 195 200 205

```
<210> 6414
<211> 458
<212> PRT
<213> B.fragilis
```

Asn 1	Gly	Cys	Ser	Val 5	Pro	Gly	Leu	Gly	Ile 10	Tyr	His	Ser	Lys	Phe 15	Pro
Asp	Ala	Glu	Arg 20	Val	Glu	Ile	Trp	Gln 25	Lys	Gln	Leu	Thr	Glu 30	Glu	Gly
Tyr	Asp	Ile 35	Ile	Leu	Gly	Val	Arg 40	Ser	Ser	Val	Phe 45	Leu	Pro	Phe	Arg
Asn 50	Leu	Gly	Leu	Val	Ile	Val 55	Asp	Glu	Glu	His 60	Glu	Asn	Thr	Tyr	Lys
Gln 65	Gln	Asp	Pro	Ala 70	Pro	Arg	Tyr	His	Ala	Arg 75	Asn	Ala	Ala	Ile	Val
Leu	Ala	Ser	Met 85	Tyr	Gly	Ala	Lys	Thr	Leu 90	Leu	Gly	Thr	Ala	Thr	Pro
Ser	Val	Glu	Thr 100	Trp	Gln	Asn	Ala 105	Thr	Thr	Gly	Lys	Phe	Gly 110	Trp	Val
Glu	Leu	Lys 115	Glu	Arg	Tyr	Lys 120	Glu	Ile	Gln	Leu	Pro	Glu	Ile	Ile	Pro
Val 130	Asp	Ile	Lys	Glu	Leu	His 135	Arg	Lys	Lys	Arg 140	Met	Thr	Gly	Gln	Phe
Ser 145	Pro	Leu	Leu	Leu	Gln 150	Tyr	Val	Arg	Glu	Ala 155	Leu	Asp	Asn	Lys	Gln
Gln	Val	Ile	Leu 165	Phe	Gln	Asn	Arg 170	Arg	Gly	Phe	Ala	Pro	Met	Ile	Glu
Cys	Arg	Thr 180	Cys	Gly	Trp	Val	Pro 185	Lys	Cys	Lys	Asn	Cys	Asp 190	Val	Ser
Leu	Thr	Tyr 195	His	Lys	Gly	Ile	Asn 200	Gln	Leu	Thr	Cys	His 205	Tyr	Cys	Gly
Tyr	Thr 210	Tyr	Gln	Leu	Pro	Arg 215	Ser	Cys	Pro	Ala	Cys 220	Glu	Gly	Val	Glu
Leu 225	Met	His	Arg	Gly	Phe 230	Gly	Thr	Glu	Lys	Ile 235	Glu	Asp	Asp	Val	Lys
Leu	Ile	Phe 245	Pro	Glu	Ala	Ser	Val 250	Ala	Arg	Met	Asp	Leu	Asp	Thr	Thr
Arg	Thr	Arg 260	Ser	Ala	Tyr	Glu	Lys 265	Ile	Ile	Ala	Asp	Phe	Glu	Gln	Gly
Lys	Thr 275	Asp	Ile	Leu	Ile	Gly	Thr 280	Gln	Met	Val	Ser	Lys	Gly	Leu	Asp
Phe	Asp 290	His	Val	Ser	Val	Val 295	Gly	Ile	Leu	Asn	Ala 300	Asp	Thr	Met	Leu
Asn 305	Tyr	Pro	Asp	Phe 310	Arg	Ser	Tyr	Glu	Arg	Ala 315	Phe	Gln	Leu	Met	Ala
Gln	Val	Ala	Gly 325	Arg	Ala	Gly	Arg	Lys	Asn	Lys 330	Arg	Gly	Arg	Val	Val
Leu	Gln	Thr 340	Lys	Ser	Ile	Asp	His 345	Pro	Ile	Ile	Arg	Gln	Val	Met	Thr
Asn	Asp 355	Tyr	Glu	Asp	Met	Val	Ala 360	Gly	Gln	Leu	Ala 365	Glu	Arg	Gln	Met

[illegible]

Phe His Tyr Pro Pro Tyr Tyr Arg Met Val Tyr Val Tyr Leu Lys Asn  
 370 375 380  
 Arg Asn Glu Thr Leu Leu Asp Val Met Ala His Thr Met Ala Glu Lys  
 385 390 395 400  
 Leu Arg Ala Leu Phe Gly Asn Arg Ile Leu Gly Pro Asp Lys Pro Pro  
 405 410 415  
 Val Ala Arg Ile Gln Thr Leu Phe Ile Arg Lys Ile Val Val Lys Ile  
 420 425 430  
 Glu Gln Asn Ala Pro Met Ser Arg Ala Arg Glu Leu Val Phe Thr Thr  
 435 440 445  
 Gly Leu Glu Gly Ser Ala Arg Ser Val His  
 450 455

<210> 6415  
 <211> 510  
 <212> PRT  
 <213> B.fragilis

<400> 6415  
 Ile Thr Asn Ser Ile Lys Thr Asn Ala Met Leu Arg Lys Ile Arg Leu  
 1 5 10 15  
 Thr Cys Gly Ile Ile Cys Leu Thr Leu Ile Thr Leu Leu Phe Leu Asp  
 20 25 30  
 Phe Thr Gly Thr Leu His Gly Trp Phe Gly Trp Leu Ala Lys Ile Gln  
 35 40 45  
 Phe Leu Pro Ala Val Leu Ala Leu Asn Val Gly Val Val Val Leu Leu  
 50 55 60  
 Ile Ile Leu Thr Gly Val Phe Gly Arg Ile Tyr Cys Ser Val Ile Cys  
 65 70 75 80  
 Pro Leu Gly Val Phe Gln Asp Val Ala Ala Trp Ile Gly Lys Lys Arg  
 85 90 95  
 Lys Lys Leu Pro Tyr Ser Tyr Ser Pro Ala Leu Ser Leu Leu Arg Tyr  
 100 105 110  
 Gly Ala Leu Ala Ile Phe Ile Ile Thr Leu Val Ala Gly Val Ser Phe  
 115 120 125  
 Ile Ala Thr Leu Phe Ala Pro Tyr Ser Ala Tyr Gly Arg Ile Ala Asn  
 130 135 140  
 Asn Leu Phe Gln Pro Ile Trp Leu Trp Gly Asn Asn Leu Phe Ala His  
 145 150 155 160  
 Leu Ala Glu Arg Ala Gly Asn Tyr Ala Phe Tyr Glu Val Asp Ile Trp  
 165 170 175  
 Ile Lys Ser Leu Pro Thr Phe Ile Val Ala Ala Ala Thr Phe Val Ile  
 180 185 190  
 Leu Ile Leu Leu Ala Trp Arg Asn Gly Arg Thr Tyr Cys Asn Thr Ile  
 195 200 205  
 Cys Pro Val Gly Thr Val Leu Gly Phe Leu Ser Arg Tyr Ser Leu Phe  
 210 215 220  
 Arg Ile Thr Ile Asp Thr Glu Lys Cys Asn Lys Cys Gly Leu Cys Ala  
 225 230 235 240  
 Arg His Cys Lys Ala Ala Cys Ile Asn Ala Lys Glu His Thr Ile Asp  
 245 250 255  
 Tyr Ser Arg Cys Val Val Cys Met Asp Cys Leu Gly Lys Cys Lys Gln  
 260 265 270  
 Lys Ala Leu Ser Tyr Gln Leu Arg Thr Thr Lys Ala Arg Pro Ala Lys  
 275 280 285  
 Ala Glu Glu Asn Ala Leu Ala Ala Ser Ser Lys Glu Val Asn Glu Ala  
 290 295 300  
 Arg Arg Asn Phe Leu Thr Val Thr Ala Met Ala Ala Thr Ala Ser Ala  
 305 310 315 320

Leu Lys Ala Gln Glu Lys Lys Val Asp Gly Gly Leu Ala Ala Ile Glu  
 325 330 335  
 Asp Lys Lys Ile Pro Asn Arg Gln Thr Pro Ile Thr Pro Pro Gly Ser  
 340 345 350  
 Leu Ser Ala Arg Asn Met Ala Ala His Cys Thr Ala Cys Gln Leu Cys  
 355 360 365  
 Val Ser Ala Cys Ser Asn Gln Val Leu Arg Pro Ser Thr Asn Leu Met  
 370 375 380  
 Asn Leu Met Gln Pro Glu Ile Ser Tyr Glu Arg Gly Tyr Cys Arg Pro  
 385 390 395 400  
 Glu Cys Asn Asp Cys Ser Gln Val Cys Pro Thr Gly Ala Ile His Pro  
 405 410 415  
 Ile Thr Ala Ala Asp Lys Ser Ser Thr Gln Ile Gly His Ala Val Trp  
 420 425 430  
 Ile Lys Ala Asn Cys Val Ser Leu Thr Asp Gly Val Lys Cys Asp Asn  
 435 440 445  
 Cys Ala Arg His Cys Pro Thr Gly Ala Ile Gln Met Ile Val Ala Glu  
 450 455 460  
 Pro Glu Lys Glu Ala Ser Pro Gln Ile Pro Ala Ile Asn Thr Glu Arg  
 465 470 475 480  
 Cys Ile Gly Cys Gly Ala Cys Glu Asn Leu Cys Pro Ala Arg Pro Phe  
 485 490 495  
 Ser Ala Ile Tyr Val Glu Gly His Glu Arg His Arg Ile Ile  
 500 505 510

&lt;210&gt; 6416

&lt;211&gt; 265

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6416

Lys Ser Val Pro Gly Ile Phe Thr Ser Asn Ile Val Ala Val Met Lys  
 1 5 10 15  
 Val Leu Ile Val Glu Asp Glu Thr Ala Ala Tyr Glu Asn Leu Thr Asp  
 20 25 30  
 Ile Leu Thr Glu Ile Thr Pro Asp Ile Arg Ile Met Ala Asn Thr Glu  
 35 40 45  
 Ser Val Thr Gln Thr Val Gly Trp Leu Gln Ser Asn Pro Ala Pro Asp  
 50 55 60  
 Leu Ile Phe Met Asp Ile His Leu Ser Asp Gly Ser Ala Phe Ala Ile  
 65 70 75 80  
 Phe Asp Arg Ile Glu Leu Glu Thr Pro Ile Ile Phe Thr Thr Ala Tyr  
 85 90 95  
 Asp Arg Tyr Ala Ile Glu Ala Phe Lys Val Asn Ser Ile Asp Tyr Leu  
 100 105 110  
 Leu Lys Pro Val Lys Val Glu Asp Val Glu His Ala Leu Glu Lys Tyr  
 115 120 125  
 Ser Lys Leu Thr Arg Gln Asp Leu Leu Gln Tyr Leu Ser Gln Leu Thr  
 130 135 140  
 Leu Leu Lys Pro Ala Pro Arg Tyr Lys Asp Lys Leu Leu Ile Ala His  
 145 150 155 160  
 Lys Asp Lys Leu Leu Pro Val Asn Ile Lys Asn Ile Ser Tyr Phe Tyr  
 165 170 175  
 Ala Thr Gly Lys Asn Thr Tyr Val Cys Leu Lys Asp Gly Asn Arg Tyr  
 180 185 190  
 Pro Tyr Ser Lys Thr Leu Glu Gln Ile Ala Ser Ser Leu Asn Pro Glu  
 195 200 205  
 Asp Phe Ile Arg Ala Asn Lys Gln Phe Ile Val Ala Arg Asp Ser Val  
 210 215 220

Thr Asp Ile Thr Ile Trp Phe Asp Ser Arg Leu Leu Ile Thr Leu Asp  
 225 230 235 240  
 Thr Glu Val Pro Glu Arg Ile Tyr Val Ser Lys Asn Lys Ala Ser Glu  
 245 250 255  
 Phe Lys Thr Trp Leu Val Asn Asp Lys  
 260 265

<210> 6417  
 <211> 280  
 <212> PRT  
 <213> B.fragilis

<400> 6417  
 Ile Thr Met Phe Tyr Asp Tyr Leu Cys Lys Gly Lys Ser Leu Tyr Leu  
 1 5 10 15  
 Ser Thr Gln Cys Leu Leu Ile Thr Ile Ser Phe Pro Asp Met Asp Ile  
 20 25 30  
 Val Asp Lys Leu Asn Lys Glu Phe Leu Thr Gln Pro Phe Cys Lys Asn  
 35 40 45  
 Glu Gln Leu Pro Glu Glu Leu Asn Glu Tyr Lys Arg Ile Ala Tyr Asn  
 50 55 60  
 Tyr Ala Arg Ile Glu Asn Ser Ile Ala Val Leu Ser Asp Met His Thr  
 65 70 75 80  
 Asn Ile Ser Tyr Ile Tyr Tyr Gly Gly Thr Ala Glu Thr Leu Gly Ile  
 85 90 95  
 Ala Arg Lys Gly Asp Asn Gln Asn Leu Glu Ser Ile Trp Glu Lys Glu  
 100 105 110  
 Val Phe Lys Tyr Ile His Pro Asp Asp Leu Ala Glu Lys Tyr Val Gln  
 115 120 125  
 Glu Leu Arg Phe Tyr His Phe Leu Lys Gln Ile Pro His Lys Lys Arg  
 130 135 140  
 Ala Asp Tyr Phe Leu Met Ser Lys Leu Arg Met Arg Asp Pro Ser Gly  
 145 150 155 160  
 Lys Tyr Ile Pro Ile Leu His Arg Met Phe Tyr Val Ala Thr His Ser  
 165 170 175  
 Asn Asp Ser Met Trp Leu Ala Leu Cys Leu Tyr Asn Leu Ser Val Asp  
 180 185 190  
 Pro Thr Met Ser Cys Arg Val Ile Asn Ser Thr Asn Gly Gln Val Ile  
 195 200 205  
 Glu Leu Glu Lys Gln Asp Cys Ser Lys Leu Leu Ser Asp Arg Glu Lys  
 210 215 220  
 Thr Ile Leu Gln Leu Ile Asp Met Gly Lys Thr Ser His Glu Ile Ala  
 225 230 235 240  
 Arg Glu Leu Phe Ile Ser Lys Asn Thr Val Ser Arg His Arg Gln Asn  
 245 250 255  
 Ile Leu Glu Lys Leu Gln Val Lys Asn Ser Ile Glu Ala Cys Arg Ile  
 260 265 270  
 Ala Lys Glu Leu Lys Leu Leu Phe  
 275 280

<210> 6418  
 <211> 195  
 <212> PRT  
 <213> B.fragilis

<400> 6418  
 Thr Gln Val Thr Pro Cys Arg Arg Leu His Val Trp Glu Glu Leu Ile  
 1 5 10 15  
 Leu Thr Phe Asn Tyr Tyr Ile Ile Ile Met Glu Thr Thr Ser Ile Lys



	20		25		30
Leu Tyr Ser	Leu Asn Tyr Asn Asp Thr Lys Thr Tyr	Leu Thr Thr Leu			
35	40	45			
Leu Phe Val Val Gly Asn Met Ala Leu Pro Gln Leu Phe His Leu Ile					
50	55	60			
Pro Gln Gly Gly Ile Thr Trp Leu Pro Ile Tyr Phe Phe Thr Leu Ile					
65	70	75			80
Gly Ala Tyr Lys Tyr Gly Trp Lys Val Gly Leu Leu Thr Ala Leu Leu					
	85	90			95
Ser Pro Val Leu Asn Ser Leu Leu Phe Gly Met Pro Gln Pro Val Ile					
100	105	110			
Leu Pro Ala Ile Leu Leu Lys Ser Thr Leu Leu Ala Ile Ala Ala Gly					
115	120	125			
Tyr Ala Ala His Arg Tyr Lys Arg Ile Ser Ile Pro Ile Leu Leu Leu					
130	135	140			
Val Val Leu Ser Tyr Gln Val Val Gly Thr Leu Gly Glu Trp Ile Leu					
145	150	155			160
Val Asn Asp Phe Phe Ser Ala Val Gln Asp Phe Arg Ile Gly Leu Pro					
	165	170			175
Gly Met Ala Leu Gln Ile Phe Gly Gly Tyr Leu Phe Ile Ser Arg Leu					
180	185	190			
Ile Tyr Lys					
195					

<210> 6419  
 <211> 87  
 <212> PRT  
 <213> B.fragilis

<400> 6419	
Asn Gln Pro Thr Ile Leu Tyr Ile Leu Thr Ser Phe Tyr Tyr Leu Ser	
1	5 10 15
Ser Ile Lys Ser Ile Asn Met Asp Ser Ile Gly Lys Arg Met Tyr Arg	
	20 25 30
Asn Leu Gly Asp Asp Thr Lys Ala Lys Ile Ser Gln Ser Leu Arg Gly	
35	40 45
Arg Ser Lys Ser Ala Ser His Ile Gln Ala Ile Ser Gln Gly Met Thr	
50	55 60
Asn Tyr Trp Lys Thr Ile Pro Val Lys Thr Asp Asn Pro Ser Asp	
65	70 75 80
Lys Thr Lys Lys Glu Gly Gln	
	85

<210> 6420  
 <211> 212  
 <212> PRT  
 <213> B.fragilis

<400> 6420	
Thr Ser Asn Thr Met Lys Lys Val Val Ile Phe Ala Arg Val Ser Ser	
1	5 10 15
Thr Asn Gly Thr Gln Asp Tyr Glu Arg Gln Ile Asn Asp Leu Gln Thr	
	20 25 30
Leu Ala Ser Ala Asn Asn Trp Thr Val Glu Ala Val Phe Ala Glu Lys	
35	40 45
Val Ser Gly Ala Lys Lys Asn Thr Glu Arg Ile Glu Leu Met Asn Met	
50	55 60
Ile Asn Tyr Ile Asn Ser His Asn Ile His Lys Val Leu Val Thr Glu	
65	70 75 80

Leu Ser Arg Leu Gly Arg Asp Thr Leu Gln Val Leu Gln Ala Ile Glu  
                     85                    90                    95  
 Ile Leu Asn Gln Asn Lys Val Ser Val Phe Ile Gln Asn Tyr Asn Ile  
                     100                    105                    110  
 Glu Thr Leu Thr Pro Glu Gly Glu Ile Asn Pro Met Ser Gln Phe Leu  
                     115                    120                    125  
 Ile Thr Ile Leu Ala Glu Val Ala Arg Met Glu Arg Lys Thr Ile Arg  
                     130                    135                    140  
 Glu Arg Val Ala Ser Gly Tyr Gln Asn Phe Arg Ser Asn Gly Gly Lys  
 145                    150                    155                    160  
 Val Gly Arg Lys Val Gly Tyr Thr Lys Ser Asp Glu Val Met Arg Glu  
                     165                    170                    175  
 Glu Tyr Ala Glu Glu Leu Arg Leu Leu Lys Arg Gly Tyr Ser Leu Arg  
                     180                    185                    190  
 Asn Thr Ser Lys Leu Thr Gly Thr Ser Ile Asn Thr Leu Arg Lys Leu  
                     195                    200                    205  
 Thr Gln Leu Thr  
                     210

&lt;210&gt; 6421

&lt;211&gt; 447

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6421

Phe Thr Gly Thr Thr His Arg Arg Ile Leu Phe Tyr Phe Asn Asn Tyr  
 1                    5                    10                    15  
 Phe Ser Tyr Glu Gln Ser Leu Asn Thr Gly Asn Gly Arg Phe Ile Arg  
                     20                    25                    30  
 Ser Gln Tyr Pro Val Ser Glu Gln Cys Ala Gln Phe Leu Gly His Gly  
                     35                    40                    45  
 Val Cys His His Ile Lys Gln Arg Leu Val Pro Val Phe Gln Ile Asp  
                     50                    55                    60  
 Ile His His Pro Val Ile Arg Arg Ile Met Lys His Leu Pro Leu Ser  
 65                    70                    75                    80  
 Gln Leu Ser Arg His His Ile Phe Ile Ile Val Arg His His Leu Thr  
                     85                    90                    95  
 Asp Asp Gly Met Val Tyr Thr Phe Gly Leu Gln His Tyr Pro Ala Pro  
                     100                    105                    110  
 Phe Ile Phe Ser Ser Gly Thr Ser Gly Asn Leu Arg His Gln Leu Glu  
                     115                    120                    125  
 Gly Thr Phe Val Arg Thr Glu Ile Gly Ile Ile Gln His Arg Val Arg  
                     130                    135                    140  
 Ile Glu Tyr Pro His His Ala Asp Val Val Lys Val Glu Ser Phe Gly  
 145                    150                    155                    160  
 Tyr His Leu Gly Thr Asp Gln Tyr Ile Gly Leu Ser Leu Phe Lys Val  
                     165                    170                    175  
 Cys Asn Asn Phe Phe Val Cys Arg Pro Arg Thr Cys Ser Ile Glu Ile  
                     180                    185                    190  
 His Thr Cys Tyr Gly Ser Phe Arg Lys Asn Gln Leu His Ile Ile Phe  
                     195                    200                    205  
 Tyr Leu Phe Arg Thr Lys Ser Ser Val His Gln Leu Asp Pro Phe Ala  
                     210                    215                    220  
 Ser Arg Thr Arg Thr Gly Gln Leu Val Ser Ile Pro Ala Ile Val Ala  
 225                    230                    235                    240  
 Ser Gln Leu Ile Asp Thr Phe Met Ile Gly Gln Ala Asp Ile Thr Val  
                     245                    250                    255  
 Leu Ala Leu Trp His Pro Ser Ala Arg Ala Ala Leu Tyr His Arg Ser  
                     260                    265                    270

1  
 2  
 3  
 4  
 5  
 6  
 7  
 8  
 9  
 10  
 11  
 12  
 13  
 14  
 15  
 16  
 17  
 18  
 19  
 20  
 21  
 22  
 23  
 24  
 25  
 26  
 27  
 28  
 29  
 30  
 31  
 32  
 33  
 34  
 35  
 36  
 37  
 38  
 39  
 40  
 41  
 42  
 43  
 44  
 45  
 46  
 47  
 48  
 49  
 50  
 51  
 52  
 53  
 54  
 55  
 56  
 57  
 58  
 59  
 60  
 61  
 62  
 63  
 64  
 65  
 66  
 67  
 68  
 69  
 70  
 71  
 72  
 73  
 74  
 75  
 76  
 77  
 78  
 79  
 80  
 81  
 82  
 83  
 84  
 85  
 86  
 87  
 88  
 89  
 90  
 91  
 92  
 93  
 94  
 95  
 96  
 97  
 98  
 99  
 100  
 101  
 102  
 103  
 104  
 105  
 106  
 107  
 108  
 109  
 110  
 111  
 112  
 113  
 114  
 115  
 116  
 117  
 118  
 119  
 120  
 121  
 122  
 123  
 124  
 125  
 126  
 127  
 128  
 129  
 130  
 131  
 132  
 133  
 134  
 135  
 136  
 137  
 138  
 139  
 140  
 141  
 142  
 143  
 144  
 145  
 146  
 147  
 148  
 149  
 150  
 151  
 152  
 153  
 154  
 155  
 156  
 157  
 158  
 159  
 160  
 161  
 162  
 163  
 164  
 165  
 166  
 167  
 168  
 169  
 170  
 171  
 172  
 173  
 174  
 175  
 176  
 177  
 178  
 179  
 180  
 181  
 182  
 183  
 184  
 185  
 186  
 187  
 188  
 189  
 190  
 191  
 192  
 193  
 194  
 195  
 196  
 197  
 198  
 199  
 200  
 201  
 202  
 203  
 204  
 205  
 206  
 207  
 208  
 209  
 210  
 211  
 212  
 213  
 214  
 215  
 216  
 217  
 218  
 219  
 220  
 221  
 222  
 223  
 224  
 225  
 226  
 227  
 228  
 229  
 230  
 231  
 232  
 233  
 234  
 235  
 236  
 237  
 238  
 239  
 240  
 241  
 242  
 243  
 244  
 245  
 246  
 247  
 248  
 249  
 250  
 251  
 252  
 253  
 254  
 255  
 256  
 257  
 258  
 259  
 260  
 261  
 262  
 263  
 264  
 265  
 266  
 267  
 268  
 269  
 270  
 271  
 272  
 273  
 274  
 275  
 276  
 277  
 278  
 279  
 280  
 281  
 282  
 283  
 284  
 285  
 286  
 287  
 288  
 289  
 290  
 291  
 292  
 293  
 294  
 295  
 296  
 297  
 298  
 299  
 300  
 301  
 302  
 303  
 304  
 305  
 306  
 307  
 308  
 309  
 310  
 311  
 312  
 313  
 314  
 315  
 316  
 317  
 318  
 319  
 320  
 321  
 322  
 323  
 324  
 325  
 326  
 327  
 328  
 329  
 330  
 331  
 332  
 333  
 334  
 335  
 336  
 337  
 338  
 339  
 340  
 341  
 342  
 343  
 344  
 345  
 346  
 347  
 348  
 349  
 350  
 351  
 352  
 353  
 354  
 355  
 356  
 357  
 358  
 359  
 360  
 361  
 362  
 363  
 364  
 365  
 366  
 367  
 368  
 369  
 370  
 371  
 372  
 373  
 374  
 375  
 376  
 377  
 378  
 379  
 380  
 381  
 382  
 383  
 384  
 385  
 386  
 387  
 388  
 389  
 390  
 391  
 392  
 393  
 394  
 395  
 396  
 397  
 398  
 399  
 400

Lys Ser Pro Ala Ile Leu Lys Gln Asn His Leu Leu Phe Ile Ile Glu  
 275 280 285  
 Cys Leu Ala Asp Ile Leu Gln Gln Gln Arg Arg Glu Leu Pro Arg His  
 290 295 300  
 Pro Leu Leu Ala Val Gln Leu Leu Tyr Ile Tyr Arg Asn Asn Leu Arg  
 305 310 315 320  
 Gln Leu Asn Phe Leu Ile Ala Phe Phe Gln Phe His Pro Pro Glu Phe  
 325 330 335  
 Ala Gly Ser Gly Ile Leu Pro Ser Leu His Arg Arg Ser Gly Ser Thr  
 340 345 350  
 Gln Gln Arg Leu Cys Pro Ile His Arg Ser Gln His Asp Gly Ser Ile  
 355 360 365  
 Pro Gly Met Ile Ala Arg Cys Gly Ile Leu Leu Leu Ile Arg Ile Phe  
 370 375 380  
 Val Phe Leu Val His Asn Asp Gln Ser Glu Ile Pro Lys Arg Glu Glu  
 385 390 395 400  
 His Arg Arg Ala Tyr Pro Gln Asn Asp Val Val Thr Leu Leu Arg Gln  
 405 410 415  
 Leu Leu Leu Pro Asp Leu Tyr Ser Leu Gly Val Gly Glu Leu Gly Val  
 420 425 430  
 Ile Asp Ser Gln Pro Gly Asn Arg Thr Pro Val Ser Ala Val Arg  
 435 440 445

<210> 6422  
 <211> 65  
 <212> PRT  
 <213> B.fragilis

<400> 6422  
 Leu Lys Thr Thr Thr Gly Arg Val Asn Gln Tyr Thr Ile Phe Pro Thr  
 1 5 10 15  
 Met Arg Glu Leu Asn Val Gly Gly Phe Ala Ala Cys Leu Ser Val Tyr  
 20 25 30  
 Pro Glu Lys Ala Arg His Lys Lys Asn Lys Phe Lys Thr Ala Cys Asn  
 35 40 45  
 Gln Ile Arg Ser Ala Met Asn Arg Thr Glu Thr Tyr Asn Ser Thr Thr  
 50 55 60  
 Gln  
 65

<210> 6423  
 <211> 63  
 <212> PRT  
 <213> B.fragilis

<400> 6423  
 Lys Ile Ser Thr Thr Lys Ser Pro Cys Ser Ile Asn Thr Asp Thr Leu  
 1 5 10 15  
 Ile Leu Lys Val Arg Lys Ser Ile Leu Ile Cys Leu Asp Gln Asp Ile  
 20 25 30  
 Glu Lys Ala Gln Arg Thr Val Asp Glu Lys Gln Ala Ala Val Asp Gly  
 35 40 45  
 Leu Asn Ala Thr Leu Lys Lys Leu Leu Asp Ala Tyr Ala Ala Glu  
 50 55 60

<210> 6424  
 <211> 419  
 <212> PRT  
 <213> B.fragilis

&lt;400&gt; 6424

Pro Asn Arg Ala Ile Gly Ile Ile Thr Asn Met Asn Lys Leu Leu Met  
 1 5 10 15  
 Pro Phe Met Thr Leu Val Cys Leu Leu Phe Thr Ala Cys Asn Lys Asp  
 20 25 30  
 Asp Ile Leu Pro Gly Gly Pro Met Leu Trp Thr Tyr Glu Ile Leu Thr  
 35 40 45  
 Pro Glu Ser Val Glu Tyr Glu Gly Gly Thr Val Gly Trp Ile Pro Lys  
 50 55 60  
 Glu Cys Phe Lys Ala Asn Gly Asn Glu Gly Tyr Ile Val Met Thr Cys  
 65 70 75 80  
 Lys Asn Phe Asp Met Leu Asn Pro Ile Ser Gly Gly Ser Tyr Thr Tyr  
 85 90 95  
 Asp Cys Gly Trp Ala Thr Leu Lys Val Glu Ala Asn Gln Leu Lys Ile  
 100 105 110  
 His Phe Pro Arg Gln Val Ser Glu Ala Pro Asp Ala Tyr Glu Glu Ile  
 115 120 125  
 Thr Ile Ser Thr Asn Asp Gly Lys Arg Thr Ala Ser Thr Ile Ile Cys  
 130 135 140  
 Leu Ser Arg Thr Phe Lys Asp Glu Gly Gln Pro Asp Pro Glu Pro Lys  
 145 150 155 160  
 Pro Leu Pro Glu Glu Ala Lys Phe Lys Met Lys Lys Ala Tyr Phe Thr  
 165 170 175  
 Pro Phe Met His Leu Asp Thr Gln Phe Pro Ala Pro Leu Asp Leu Val  
 180 185 190  
 Thr Phe Arg Ile Thr Asp Ile Asn Asp Asn Tyr Thr Pro Leu Gly Phe  
 195 200 205  
 Pro Glu Phe Thr Gln Tyr Tyr Asp Ser Ile Val Trp Ser Ala Glu Gly  
 210 215 220  
 Phe Pro His Thr Phe Arg Val Tyr Glu Ser Asn Thr Thr Glu Gly Gly  
 225 230 235 240  
 Met Glu Thr His Leu Ala Thr Glu Trp Ser Ser His Phe Phe Lys Ser  
 245 250 255  
 Gly Thr Ile Lys Asn Tyr Leu Lys Gly Tyr Arg Lys Gly Lys Val Glu  
 260 265 270  
 Tyr Glu Thr Ser Leu Ala Val Arg Leu Tyr Glu Arg Asp Phe Leu Gly  
 275 280 285  
 Ile Glu Trp Gly Thr Ile Val Leu Gln Ser Pro Gln Asn Leu Thr Thr  
 290 295 300  
 Tyr Cys Leu Leu Asp Thr Asp Tyr Glu Tyr Gln Val Tyr Asp Ile Val  
 305 310 315 320  
 Ala Lys Asp Tyr Asn Pro Phe Ser Lys Ile Ile Pro Val Asn His Lys  
 325 330 335  
 Gln Leu Ser Asp Ser Asp Phe Pro Ala Ala Ala Gln Lys Ala Ile Lys  
 340 345 350  
 Thr Leu Met Glu Asn Asn Ile Gly Glu Gly Gln Asn Ala Gly Gly Lys  
 355 360 365  
 Glu Asn Leu Phe Lys Cys Leu Pro Glu Glu Gly Val Lys Ala Glu Leu  
 370 375 380  
 Tyr Trp Glu Asn Lys Thr Thr Arg Ile Leu Met Leu His Gln Leu Ser  
 385 390 395 400  
 Thr Asp Pro Asp Asp Leu Thr Gln Glu Lys Tyr Tyr Leu His Val Glu  
 405 410 415  
 Pro Lys Gln

&lt;210&gt; 6425

&lt;211&gt; 431

<212> PRT  
 <213> B.fragilis

<400> 6425

Tyr	Asp	Met	Ala	Lys	Ile	Gln	Ile	Lys	Ser	Glu	Lys	Leu	Thr	Pro	Phe
1				5					10					15	
Gly	Gly	Ile	Phe	Ser	Ile	Met	Glu	Lys	Phe	Asp	Ser	Met	Leu	Ser	Pro
			20					25					30		
Val	Ile	Asp	Ser	Thr	Leu	Gly	Gln	Arg	Cys	Ser	Ser	Ile	Phe	Gly	Tyr
		35					40					45			
Gln	Phe	Ser	Glu	Ile	Val	Arg	Ser	Leu	Met	Ser	Val	Tyr	Phe	Cys	Gly
	50					55					60				
Gly	Ser	Cys	Val	Glu	Asp	Val	Thr	Ser	Gln	Leu	Met	Arg	His	Leu	Ser
65					70					75				80	
Tyr	His	Pro	Thr	Leu	Arg	Thr	Cys	Ser	Ser	Asp	Thr	Ile	Leu	Arg	Ala
				85					90					95	
Ile	Lys	Glu	Leu	Thr	Gln	Glu	Asn	Ile	Ser	Tyr	Thr	Ser	Asp	Gln	Gly
			100					105						110	
Lys	Thr	Tyr	Asp	Phe	Asn	Thr	Ala	Asp	Lys	Leu	Asn	Thr	Leu	Leu	Ile
		115					120					125			
Asn	Ala	Leu	Val	Ser	Thr	Gly	Glu	Leu	Lys	Glu	Ile	Glu	Glu	Tyr	Asp
	130					135					140				
Val	Asp	Phe	Asp	His	Gln	Phe	Leu	Glu	Thr	Glu	Lys	Tyr	Asp	Ala	Lys
145					150					155				160	
Pro	Thr	Tyr	Lys	Lys	Phe	Leu	Gly	Tyr	Arg	Pro	Gly	Val	Tyr	Val	Ile
				165					170					175	
Gly	Asp	Lys	Ile	Val	Tyr	Ile	Glu	Asn	Ser	Asp	Gly	Asn	Thr	Asn	Val
			180					185					190		
Arg	Phe	His	Gln	Ala	Asp	Thr	His	Lys	Arg	Phe	Phe	Ala	Leu	Leu	Glu
		195					200					205			
Ser	Gln	Asn	Ile	Arg	Val	Asn	Arg	Phe	Arg	Ala	Asp	Cys	Gly	Ser	Cys
	210					215					220				
Ser	Lys	Glu	Ile	Val	Ser	Glu	Ile	Glu	Lys	His	Cys	Lys	His	Phe	Tyr
225					230					235				240	
Ile	Arg	Ala	Asn	Arg	Cys	Ser	Ser	Leu	Tyr	Asn	Asp	Ile	Phe	Ala	Leu
				245					250					255	
Arg	Gly	Trp	Lys	Thr	Glu	Glu	Ile	Asn	Gly	Ile	Gln	Phe	Glu	Leu	Asn
		260						265					270		
Ser	Ile	Leu	Val	Glu	Lys	Trp	Glu	Gly	Lys	Cys	Tyr	Arg	Leu	Val	Ile
	275						280					285			
Gln	Arg	Gln	Arg	Arg	Asn	Ser	Gly	Asp	Leu	Asp	Leu	Trp	Glu	Gly	Glu
	290					295					300				
Tyr	Thr	Tyr	Arg	Cys	Ile	Leu	Thr	Asn	Asp	Tyr	Lys	Ser	Ser	Thr	Arg
305					310					315				320	
Asp	Ile	Val	Glu	Phe	Tyr	Asn	Leu	Arg	Gly	Gly	Lys	Glu	Arg	Ile	Phe
				325					330					335	
Asp	Asp	Met	Asn	Asn	Gly	Phe	Gly	Trp	Ser	Arg	Leu	Pro	Lys	Ser	Phe
			340					345					350		
Met	Ala	Glu	Asn	Thr	Val	Phe	Leu	Leu	Leu	Thr	Ala	Leu	Ile	His	Asn
	355						360					365			
Phe	Tyr	Lys	Thr	Ile	Met	Ser	Arg	Leu	Asp	Thr	Lys	Ala	Phe	Gly	Leu
	370					375					380				
Lys	Lys	Thr	Ser	Arg	Ile	Lys	Ala	Phe	Val	Phe	Arg	Phe	Ile	Ser	Val
385					390					395				400	
Pro	Ala	Lys	Trp	Ile	Met	Thr	Ala	Arg	Gln	Tyr	Val	Leu	Asn	Ile	Tyr
				405					410					415	
Thr	Glu	Asn	Arg	Ala	Tyr	Ala	Lys	Pro	Phe	Lys	Thr	Glu	Phe	Gly	
			420					425					430		

<210> 6426  
 <211> 165  
 <212> PRT  
 <213> B.fragilis

<400> 6426

Leu Asn Ser Tyr Lys Met Lys Lys Asn Val Phe Ile Leu Phe Val Val  
 1 5 10 15  
 Leu Leu Thr Thr Ser Val Phe Met Ser Cys Ser Ser Asp Asp Asn  
 20 25 30  
 Asp Asn Gly Lys Val Glu Asn Thr Ile Ile Ile Asn Gly Lys Glu Tyr  
 35 40 45  
 Leu Asn Asp Glu Ser Ala Ser Val Ser Tyr Asn Ser Tyr Ser Gln Ser  
 50 55 60  
 Ile Ser Phe Glu Ala Gly Phe Ser Asn Pro Glu Ser Leu Met Asp Ile  
 65 70 75 80  
 Ser Tyr Phe Thr Ile Ala Ser Asn Asp Ala Ala Ser Val Asp Lys Leu  
 85 90 95  
 Thr Asn Gly Met Glu Leu Asn Ala Lys Val Lys Glu Phe Val Lys Asn  
 100 105 110  
 Thr Asp Leu Gly Ser Ser Tyr Thr Tyr Thr Thr Val Gly Gly Lys Val  
 115 120 125  
 Val Val Asp Asn Val Thr Ser Glu Ser Ile Thr Leu Arg Tyr Asp Asp  
 130 135 140  
 Phe Lys Phe Thr Lys Asn Gly Gly Glu Tyr Thr Ile Lys Gly Arg Val  
 145 150 155 160  
 Leu Tyr His Lys Asn  
 165

<210> 6427  
 <211> 65  
 <212> PRT  
 <213> B.fragilis

<400> 6427

Pro Thr Asp Tyr Gln Thr Ile Tyr Ile Phe His Phe Cys His Phe Thr  
 1 5 10 15  
 Pro Leu Phe Cys Tyr Leu Val His Phe Glu Phe Ser Phe Ser Phe Ala  
 20 25 30  
 Pro Leu Gln Tyr Arg Lys Thr Lys Glu Asn Gln Leu Phe Ser Val Ile  
 35 40 45  
 Thr Arg Leu Trp Tyr Leu Asn Arg Asp Lys Thr Ser Ser Val Trp Gln  
 50 55 60  
 Arg  
 65

<210> 6428  
 <211> 64  
 <212> PRT  
 <213> B.fragilis

<400> 6428

Lys Lys Cys Tyr Val Ser Lys Ser Met Phe Ser Leu Ala Asp Asp Gly  
 1 5 10 15  
 Leu Ala Ser Ile Leu Cys Asn Thr Ser Ile Tyr Ser Tyr Phe Val Gly  
 20 25 30  
 Asn Pro Lys Gln Thr Ile Glu Gly Cys Lys Trp Arg Phe Ala Lys Arg  
 35 40 45  
 Asn Ser Ser Lys Arg Glu Ser Leu Phe Ile Ile Arg Tyr Lys Lys Glu

50

55

60

<210> 6429  
 <211> 66  
 <212> PRT  
 <213> B.fragilis

<400> 6429

Ser Leu Leu Tyr Pro Ser Ile Phe Leu Pro Ile Phe Leu Glu Tyr Ser  
 1 5 10 15  
 Asp Phe Gly Cys Asp Phe Gly Tyr Ser Thr Tyr Asn Ser Gly Trp Ser  
 20 25 30  
 Cys Phe Val Ile Ser Lys Tyr Gly Lys Gln Tyr Ile Ala Glu Lys Asp  
 35 40 45  
 Lys Cys Met Asn Gly Pro Phe Asn Leu Phe Lys Val Leu Glu Leu Pro  
 50 55 60  
 Gln His  
 65

<210> 6430  
 <211> 192  
 <212> PRT  
 <213> B.fragilis

<400> 6430

Phe Ile Ser Tyr Ser Glu Phe Ile Met Val Asn Glu Leu Asn Lys Glu  
 1 5 10 15  
 Met Asp Val Asp Lys Tyr Lys Ile Arg Ser Trp Ser Lys Asp Asp Phe  
 20 25 30  
 Ser Thr Leu Ala Lys Tyr Leu Asn Asn Lys Lys Ile Trp Asp Asn Cys  
 35 40 45  
 Arg Asp Ser Leu Pro Tyr Pro Tyr Ser Glu Asn Asp Ala Gln Gln Phe  
 50 55 60  
 Ile Leu Ser Val Ser Ser Gln Asn Glu Gln Asn Asn Tyr Cys Ile Glu  
 65 70 75 80  
 Val Asn Gln Glu Ala Ala Gly Asn Ile Ser Phe Ala Arg Gly Ile Asp  
 85 90 95  
 Val Glu Arg Tyr Asn Ala Glu Leu Gly Tyr Trp Leu Ala Glu Pro Tyr  
 100 105 110  
 Trp Gly Lys Gly Ile Met Thr Gln Met Leu Ala Leu Ala Ile Ser Ser  
 115 120 125  
 Tyr Phe His His Thr Asp Val Met Arg Ile Cys Ala Asn Val Tyr Ala  
 130 135 140  
 Gly Asn Ile Ala Ser Met Arg Val Leu Glu Lys Ile Gly Phe Arg Lys  
 145 150 155 160  
 Cys Gly Ile His Arg Asn Ala Cys Phe Lys Asn Gly Val Phe Thr Asp  
 165 170 175  
 Cys His Tyr Phe Glu Leu Leu Lys Glu Glu Phe Arg Asn Leu Val Lys  
 180 185 190

<210> 6431  
 <211> 235  
 <212> PRT  
 <213> B.fragilis

<400> 6431

Leu Leu Ala Tyr Asn Thr Leu Leu Leu Lys Trp Phe Tyr Ile Ser Leu  
 1 5 10 15  
 Cys Val Glu Arg Asp Ile Phe Gln Phe Ile Met Asn Gly Phe Phe Leu

[illegible]

<400> 6432

[illegible]

<400> 6433

Tyr	Tyr	Leu	Tyr	Ser	Leu	Ile	Thr	His	Ser	Thr	Ala	Ile	Glu	Gly	Ser
1				5					10					15	
Thr	Leu	Thr	Glu	Leu	Asp	Thr	Gln	Leu	Leu	Phe	Asp	Glu	Gly	Val	Thr
			20					25					30		
Ala	Lys	Gly	Lys	Pro	Leu	Val	His	His	Leu	Met	Asn	Glu	Asp	Leu	Lys
		35					40					45			
Gln	Ala	Tyr	Glu	Leu	Ala	Lys	Thr	Glu	Ser	Ser	Ser	Leu	Val	Gln	Ile
	50					55					60				



```

Thr Pro Ala Leu Leu Gln Arg Leu Asn Ala Thr Leu Met Arg Thr Thr
65          70          75          80
Ser Ser Val His Ser Val Met Gly Gly Ser Phe Asp Ser Ser Lys Gly
          85          90          95
Asp Phe Arg Leu Cys Gly Val Thr Ala Gly Val Gly Gly His Ser Tyr
          100          105          110
Met Asn Tyr Leu Lys Val Pro Ala Lys Val Asp Glu Leu Cys Ala Ile
          115          120          125
Leu Gln Val Lys Gln Lys Thr Val Gly Thr Leu Arg Glu Gln Tyr Glu
          130          135          140
Leu Ser Phe Asn Ala His Leu Asn Leu Val Thr Ile His Pro Trp Val
145          150          155          160
Asp Gly Asn Gly Arg Met Ala Arg Leu Leu Met Asn Tyr Ile Gln Phe
          165          170          175
Cys Tyr His Leu Phe Pro Thr Lys Ile Phe Lys Glu Asp Arg Glu Glu
          180          185          190
Tyr Ile Leu Ser Leu Arg Gln Cys Gln Asp Glu Glu Thr Asn Gln Val
          195          200          205
Phe Leu Asp Phe Met Val Arg Gln Leu Lys Lys Ser Leu Ser Leu Glu
          210          215          220
Ile Glu Cys Phe Asn Ala Ser Gln Lys Arg Gly Phe Ser Phe Met Phe
225          230          235          240

```

&lt;210&gt; 6434

&lt;211&gt; 91

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6434

```

Leu Gln Arg Tyr His Pro Cys Gly Ser Arg Lys Arg Gln Leu Pro Gln
1          5          10          15
Lys His Phe Thr Gly Thr Ala Gly Ser Thr Gln Glu Arg Asn Pro Arg
          20          25          30
Gly Ser Leu Leu Pro Arg Thr Tyr Arg Ser Tyr His Asn Gly Cys Arg
          35          40          45
Ser Arg Arg Tyr Ser Ile Ser Val Phe Ala Ser Gln Glu Leu Asn Pro
          50          55          60
Gln Lys Ser Arg Val Leu Leu Ile Leu Gly Leu Thr Lys Thr Asn Asp
65          70          75          80
Trp Lys Gln Ile Gln Gln Tyr Phe Asn Glu Tyr
          85          90

```

&lt;210&gt; 6435

&lt;211&gt; 459

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6435

```

Leu Ala Tyr His Leu Pro Ile Gln Arg Gln Phe Ile Gln Leu Ser Leu
1          5          10          15
Pro Lys Ile Lys Lys Lys Asp Met Ile Leu Gln Leu Ala Phe Val Leu
          20          25          30
Thr Ala Ile Ile Ile Gly Ala Arg Leu Gly Gly Ile Gly Leu Gly Val
          35          40          45
Met Gly Gly Val Gly Leu Gly Ile Leu Thr Phe Ala Phe Gly Leu Gln
          50          55          60
Pro Thr Ala Pro Pro Ile Asp Val Met Leu Met Ile Ala Ala Val Ile
65          70          75          80
Ser Ala Ala Ser Cys Met Gln Ala Ala Gly Gly Leu Asp Tyr Met Val

```

				85				90					95				
Lys	Leu	Ala	Glu	Lys	Leu	Leu	Arg	Lys	Asn	Pro	Ser	His	Val	Thr	Ile		
			100					105					110				
Leu	Ser	Pro	Ile	Val	Thr	Tyr	Leu	Phe	Thr	Phe	Val	Ala	Gly	Thr	Gly		
		115					120					125					
His	Val	Ala	Tyr	Ser	Val	Leu	Pro	Val	Ile	Ala	Glu	Val	Ala	Thr	Glu		
	130					135					140						
Thr	Lys	Ile	Arg	Pro	Glu	Arg	Pro	Leu	Gly	Ile	Ala	Val	Ile	Ala	Ser		
145					150					155					160		
Gln	Gln	Ala	Ile	Thr	Ala	Ser	Pro	Ile	Ser	Ala	Ala	Thr	Val	Ala	Leu		
			165					170							175		
Leu	Gly	Leu	Leu	Ala	Gly	Phe	Asp	Ile	Thr	Leu	Phe	Asp	Ile	Leu	Lys		
		180						185					190				
Ile	Thr	Ile	Pro	Ala	Thr	Ile	Ile	Gly	Val	Leu	Val	Gly	Ala	Leu	Phe		
	195					200						205					
Ser	Met	Lys	Val	Gly	Lys	Glu	Leu	Val	Asp	Asp	Pro	Glu	Tyr	Gln	Lys		
	210				215						220						
Arg	Leu	Ala	Glu	Gly	Tyr	Phe	Asn	Ser	Lys	Lys	Ile	Glu	Ile	Lys	Asp		
225					230					235					240		
Val	His	Asn	Arg	Arg	Asn	Ala	Met	Ile	Ser	Val	Leu	Ile	Phe	Ile	Leu		
			245						250					255			
Ala	Thr	Ala	Phe	Ile	Val	Phe	Phe	Gly	Ser	Phe	Asp	Gly	Met	Arg	Pro		
		260						265					270				
Thr	Phe	Leu	Ile	Asp	Gly	Glu	Thr	Val	Thr	Leu	Gly	Met	Ser	Ala	Ile		
	275						280					285					
Ile	Glu	Ile	Val	Met	Leu	Ser	Ala	Ala	Ala	Leu	Ile	Leu	Leu	Ile	Thr		
	290				295						300						
Lys	Thr	Asp	Gly	Ile	Lys	Ala	Thr	Gln	Gly	Ser	Val	Phe	Pro	Ala	Gly		
305				310					315					320			
Met	Gln	Ala	Val	Ile	Ala	Ile	Phe	Gly	Ile	Ala	Trp	Met	Gly	Asp	Thr		
		325						330					335				
Phe	Leu	Gln	Gly	Asn	Met	Gly	Gln	Leu	Thr	Glu	Ser	Ile	Glu	Gly	Leu		
		340						345				350					
Val	Arg	Gln	Met	Pro	Trp	Leu	Phe	Gly	Ile	Ala	Leu	Phe	Ile	Met	Ser		
	355					360					365						
Ile	Leu	Leu	Tyr	Ser	Gln	Ala	Ala	Thr	Val	Arg	Ala	Leu	Met	Pro	Leu		
	370			375						380							
Gly	Ile	Ala	Leu	Gly	Ile	Ser	Pro	Tyr	Met	Leu	Ile	Ala	Met	Phe	Pro		
385				390					395					400			
Ala	Val	Asn	Gly	Tyr	Phe	Phe	Ile	Pro	Asn	Tyr	Pro	Thr	Val	Val	Ala		
		405						410					415				
Ala	Ile	Asn	Phe	Asp	Arg	Thr	Gly	Thr	Thr	Lys	Ile	Gly	Lys	Tyr	Val		
		420					425					430					
Leu	Asn	His	Ser	Phe	Met	Met	Pro	Gly	Leu	Ile	Ser	Thr	Val	Val	Ala		
	435					440					445						
Ile	Ala	Leu	Gly	Leu	Leu	Phe	Ile	Gln	Ile	Phe							
	450					455											

&lt;210&gt; 6436

&lt;211&gt; 327

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6436

Leu	Lys	Thr	Gln	Thr	Trp	Arg	Phe	Met	Lys	Lys	Leu	Met	Leu	Leu	Thr		
1			5					10					15				
Leu	Leu	Ser	Thr	Phe	Ile	Phe	Tyr	Ser	Cys	Ser	Asp	Asp	Asp	Ser	Cys		
		20					25					30					
Thr	Thr	Cys	Lys	Glu	Asp	Asn	Gly	Ser	Leu	Val	Thr	Pro	Asp	Leu	Ser		

35	40	45
Val Thr Leu Ser Asp Thr	Gln Ser Pro Met Thr Gly	Val Leu Glu Ala
50	55	60
Tyr Pro Cys Gln Ala Gly	Gly Ala Ile Tyr Tyr Gly	Asn Tyr Ile Glu
65	70	75
Gly Lys Leu Thr Ser Phe	Pro Gly Met Tyr Tyr Leu	Gln Asn Gly Glu
85	90	95
Ile Tyr Gly Asp Lys Asn Arg	Glu Ile Ser Leu Pro Val Gly	Thr Tyr
100	105	110
Asn Met Ile Tyr Trp Gly Thr	Pro Lys Tyr Glu Glu Leu	Ile Tyr Ser
115	120	125
Asn Pro Val Val Val Ala	Pro Gln Ile Thr Ile Gly	Gly Asp Leu Ser
130	135	140
Gln Gln Tyr Phe Gly Leu Arg	Lys Val Ser Ala Asp Thr	Thr Tyr Tyr
145	150	155
Pro Val Phe Asp Leu Val Tyr	Thr Val Lys Pro Ala His	Ile Gly Thr
165	170	175
Glu Glu Leu Ser Ala Ala Met	Gln Arg Val Val Ala Gly	Leu Lys Val
180	185	190
Ile Val Lys Asn Lys Asn Asn	Gly Ile Leu Ser Ser Ser	Ile Ala Gly
195	200	205
Met Glu Val His Val Gly Gly	Ile Ala Glu Lys Leu Asn	Met Tyr Thr
210	215	220
Ala Ala Pro Val Asn Gln Thr	Lys Thr Val Ser Phe Pro	Leu Val Leu
225	230	235
Ser Ala Asp Gly Thr Gln Met	Ser Asn Ala Thr Val Met	Leu Phe Pro
245	250	255
Ser Ser Ala Lys Pro Met Phe	Lys Leu Ile Ile Lys Leu	Lys Asn Gly
260	265	270
Asn Thr Lys Val Tyr Gln Gln	Pro Leu Asn Ala Pro Leu	Lys Ala Asn
275	280	285
Asn Lys Leu Thr Leu Thr Leu	Thr Leu Gly Asp Ile Phe	Ser Glu Glu
290	295	300
Thr Ser Gly Gly Phe Thr Ile	Asp Asn Trp Gln Glu Glu	Asn Glu Thr
305	310	315
Ile Asp Ile Pro Thr Leu Glu		
325		

&lt;210&gt; 6437

&lt;211&gt; 83

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6437

Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
1 5 10 15
Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
20 25 30
Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
35 40 45
Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
50 55 60
Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
65 70 75 80
Ser Ala Arg

&lt;210&gt; 6438

&lt;211&gt; 224

<212> PRT  
<213> B.fragilis

<400> 6438

Asn	Lys	His	Asn	Gln	Lys	Val	Glu	Met	Lys	Lys	Val	Cys	Leu	Ser	Leu
1			5						10					15	
Leu	Met	Gly	Leu	Met	Val	Gln	Met	Thr	Phe	Gly	Gln	Thr	Leu	Glu	Lys
			20					25					30		
Met	Gln	Trp	Phe	Asn	Glu	Pro	Glu	Gln	Trp	Glu	Ile	Lys	Asn	Asn	Val
		35					40					45			
Leu	Ser	Met	Ser	Val	Thr	Pro	Gln	Ser	Asp	Tyr	Trp	Arg	Ile	Ser	His
	50					55					60				
Tyr	Gly	Phe	Thr	Val	Asp	Asp	Ala	Pro	Phe	Tyr	Tyr	Ala	Thr	Tyr	Gly
65					70					75					80
Gly	Glu	Phe	Glu	Ala	Lys	Val	Lys	Val	Val	Gly	Glu	Tyr	Lys	Glu	Arg
				85					90					95	
Phe	Asp	Gln	Ala	Gly	Leu	Met	Leu	Arg	Ile	Asp	His	Glu	Asn	Tyr	Ile
			100					105					110		
Lys	Ala	Gly	Ile	Glu	Phe	Val	Asp	Gly	Lys	Phe	Asn	Leu	Ser	Thr	Val
		115					120					125			
Val	Thr	His	Lys	Thr	Ser	Asp	Trp	Ser	Val	Ile	Thr	Leu	Asp	Lys	Thr
	130					135						140			
Val	Pro	Tyr	Ile	Trp	Ile	Lys	Ala	Val	Arg	Arg	Leu	Asp	Ala	Val	Glu
145					150					155					160
Ile	Phe	Tyr	Ser	Phe	Asp	Asp	Lys	Thr	Tyr	Thr	Leu	Met	Arg	Asn	Ala
				165					170					175	
Trp	Leu	Gln	Asp	His	Ile	Pro	Val	Lys	Val	Gly	Leu	Met	Ala	Ala	Cys
			180					185					190		
Pro	Asp	Gly	Ser	Gly	Phe	Asn	Ala	Lys	Phe	Glu	Tyr	Phe	Gln	Val	Lys
		195					200					205			
His	Leu	Pro	Asp	Gln	Arg	Arg	Val	Glu	Trp	Leu	Lys	Lys	Asn	Ala	Glu
	210					215						220			

<210> 6439

<211> 229

<212> PRT

<213> B.fragilis

<400> 6439

Ile	Leu	Asn	Lys	Ser	Arg	Ile	Leu	Arg	Lys	Ser	Pro	Arg	Ser	Ala	Leu
1			5						10					15	
Gly	Tyr	Ala	Trp	Gly	Asp	Phe	Phe	Ile	Thr	His	Ser	Arg	Met	Ile	Lys
			20					25					30		
Lys	Met	Lys	Gly	Ile	Trp	Pro	Glu	Val	Phe	Pro	Ala	Val	Phe	Glu	Glu
		35					40					45			
Gly	Gly	Leu	Tyr	Pro	Cys	His	Pro	Lys	Arg	Glu	Leu	Pro	Leu	Lys	Arg
	50					55					60				
Asp	Gly	Ala	Asn	Pro	Lys	Leu	Lys	Gly	Arg	Thr	Ile	Asn	Leu	Gln	Asn
65					70					75					80
Ala	Val	Lys	Lys	Cys	Asn	Arg	Leu	Cys	Pro	Leu	Arg	Tyr	Asp	Ser	Ile
				85					90					95	
Thr	Val	Ser	Glu	Gly	Arg	Phe	Met	Phe	Asn	Gly	Lys	Val	Thr	Ala	Pro
			100					105					110		
Gln	Val	Arg	Glu	Leu	Phe	Ile	Gln	Glu	Thr	Asp	Ser	Asp	Arg	Phe	Pro
		115					120						125		
Val	Thr	Leu	Pro	Val	Val	Leu	Asp	Pro	Gly	Glu	Ile	Asn	Ala	Lys	Ile
	130					135					140				
Gly	Asp	Ile	Val	Leu	Val	Glu	Gly	Ser	Gly	Leu	Asn	Glu	Glu	Met	Met
145					150					155					160

[illegible][illegible]

1987	1988	1989	1990	1991
1992	1993	1994	1995	1996
1997	1998	1999	2000	2001
2002	2003	2004	2005	2006
2007	2008	2009	2010	2011
2012	2013	2014	2015	2016
2017	2018	2019	2020	2021
2022	2023	2024	2025	2026
2027	2028	2029	2030	2031
2032	2033	2034	2035	2036
2037	2038	2039	2040	2041
2042	2043	2044	2045	2046
2047	2048	2049	2050	2051
2052	2053	2054	2055	2056
2057	2058	2059	2060	2061
2062	2063	2064	2065	2066
2067	2068	2069	2070	2071
2072	2073	2074	2075	2076
2077	2078	2079	2080	2081
2082	2083	2084	2085	2086
2087	2088	2089	2090	2091
2092	2093	2094	2095	2096
2097	2098	2099	2100	2101
2102	2103	2104	2105	2106
2107	2108	2109	2110	2111
2112	2113	2114	2115	2116
2117	2118	2119	2120	2121
2122	2123	2124	2125	2126
2127	2128	2129	2130	2131
2132	2133	2134	2135	2136
2137	2138	2139	2140	2141
2142	2143	2144	2145	2146
2147	2148	2149	2150	2151
2152	2153	2154	2155	2156
2157	2158	2159	2160	2161
2162	2163	2164	2165	2166
2167	2168	2169	2170	2171
2172	2173	2174	2175	2176
2177	2178	2179	2180	2181
2182	2183	2184	2185	2186
2187	2188	2189	2190	2191
2192	2193	2194	2195	2196
2197	2198	2199	2200	2201
2202	2203	2204	2205	2206
2207	2208	2209	2210	2211
2212	2213	2214	2215	2216
2217	2218	2219	2220	2221
2222	2223	2224	2225	2226
2227	2228	2229	2230	2231
2232	2233	2234	2235	2236
2237	2238	2239	2240	2241
2242	2243	2244	2245	2246
2247	2248	2249	2250	2251
2252	2253	2254	2255	2256
2257	2258	2259	2260	2261
2262	2263	2264	2265	2266
2267	2268	2269	2270	2271
2272	2273	2274	2275	2276
2277	2278	2279	2280	2281
2282	2283	2284	2285	2286
2287	2288	2289	2290	2291
2292	2293	2294	2295	2296
2297	2298	2299	2300	2301
2302	2303	2304	2305	2306
2307	2308	2309	2310	2311
2312	2313	2314	2315	2316
2317	2318	2319	2320	2321
2322	2323	2324	2325	2326
2327	2328	2329	2330	2331
2332	2333	2334	2335	2336
2337	2338	2339	2340	2341
2342	2343	2344	2345	2346
2347	2348	2349	2350	2351
2352	2353	2354	2355	2356
2357	2358	2359	2360	2361
2362	2363	2364	2365	2366
2367	2368	2369	2370	2371
2372	2373	2374	2375	2376
2377	2378	2379	2380	2381
2382	2383	2384	2385	2386
2387	2388	2389	2390	2391
2392	2393	2394	2395	

[illegible][illegible][illegible][illegible]

145                      150                      155                      160  
 Ala Tyr Ile Gln Lys Lys Asp Leu Asn Gly Asn Ile Leu Thr Tyr His  
                                  165                      170                      175  
 Arg Arg Lys Thr Gly Arg Gln Ile Thr Ile Thr Val Thr Lys Asp Ala  
                                  180                      185                      190  
 Met Asn Ile Ile Arg Glu Tyr Met Asp Thr Thr Thr Glu Ser Pro Tyr  
                                  195                      200                      205  
 Leu Phe Pro Ile Leu Ser Ala Glu Gly Gly Glu Asp Thr Ile Tyr Arg  
                                  210                      215                      220  
 Glu Tyr Gln Gln Ala Leu Arg Ile Phe Asn Tyr Gln Leu Thr Lys Leu  
 225                      230                      235                      240  
 Gly Glu Leu Leu Gly Leu Thr Thr Glu Leu Thr Ser Tyr Thr Ala Arg  
                                  245                      250                      255  
 His Thr Trp Ala Thr Leu Ala Tyr Tyr Leu Glu Val His Pro Gly Ile  
                                  260                      265                      270  
 Ile Arg Glu Ala Met Gly His Ser Ser Ile Lys Val Thr Glu Thr Tyr  
                                  275                      280                      285  
 Leu Lys Pro Phe Asn Ile Lys Lys Leu Asp Glu Thr Asn Leu Ser Ile  
                                  290                      295                      300  
 Ile Ser Tyr Ala Lys Arg Ser Phe Glu Gly  
 305                      310

<210> 6442  
 <211> 76  
 <212> PRT  
 <213> B.fragilis

<400> 6442  
 Asn Met His Asn Met Asp Asn Lys Gln Glu Arg Thr Val Val His Val  
 1                      5                      10                      15  
 Glu Tyr Asn Gly Gln His Tyr Tyr Phe Gly Ser Leu Ser Ala Ile Tyr  
                                  20                      25                      30  
 Thr Lys Phe Ser Pro Lys Asp Leu Gly Ile Ala Leu Gly Thr Leu Arg  
                                  35                      40                      45  
 Asn Tyr Gly Leu Lys Glu Glu Lys Pro Tyr Gln Asn Ser Leu Cys Thr  
                                  50                      55                      60  
 Ile Arg Lys Gly Phe Leu Ile Thr Met Pro Lys Lys  
 65                      70                      75

<210> 6443  
 <211> 91  
 <212> PRT  
 <213> B.fragilis

<400> 6443  
 Pro Val Cys Lys Asp Lys Pro Phe Pro Leu Leu Ser Gln Met Ile Thr  
 1                      5                      10                      15  
 Ile Glu Lys Met Asn Glu Gln Gln Leu Phe Ile Lys Ile Gly Asp Lys  
                                  20                      25                      30  
 Ile Lys Glu Ile Arg Leu Glu Lys Gly Ile Ser Gln Gln Asp Leu Ala  
                                  35                      40                      45  
 Ala Lys Cys Asn Phe Glu Lys Ala Asn Met Ser Arg Ile Glu Ala Gly  
                                  50                      55                      60  
 Arg Thr Asn Leu Thr Ile Lys Asn Ala Tyr Lys Ile Ser Leu Ala Leu  
 65                      70                      75                      80  
 Gly Val Arg Leu Lys Asp Leu Leu Asp Val Glu  
                                  85                      90

<210> 6444

<211> 60  
 <212> PRT  
 <213> B.fragilis

<400> 6444

Thr	Asp	Leu	Asn	Lys	Lys	Thr	Leu	Gly	Arg	Arg	Glu	Phe	Leu	Ile	Gly
1				5					10					15	
Cys	Cys	Leu	Tyr	Arg	Lys	Glu	Pro	Ile	Lys	Pro	Thr	Asn	Ile	Met	Lys
			20					25					30		
Glu	Phe	Met	Leu	Ile	Ala	Ser	Leu	Val	Leu	Ser	Phe	Cys	Ile	Leu	Ile
		35					40					45			
Leu	Cys	Arg	Asp	Tyr	Ile	Val	Phe	Met	Leu	Lys	Lys				
	50					55					60				

<210> 6445  
 <211> 153  
 <212> PRT  
 <213> B.fragilis

<400> 6445

Arg	Met	Ala	Lys	Ile	Glu	Asn	Lys	Thr	Lys	Glu	Asn	Pro	Lys	Leu	Glu
1				5					10					15	
Gln	Asn	Lys	Leu	Ser	Asp	Gly	Arg	Ile	Ser	Leu	Tyr	Leu	Glu	Tyr	Tyr
			20					25					30		
Leu	Gly	Arg	Glu	Glu	Lys	Pro	Val	Leu	Asp	Ala	Asn	Gly	Asn	Gln	Val
		35					40					45			
Tyr	Tyr	Glu	Asp	Gly	Lys	Met	Gln	Gly	Lys	Pro	Lys	Phe	Ser	Val	Lys
	50					55					60				
His	Asn	Arg	Arg	Lys	Glu	Asn	Leu	Asn	Leu	Tyr	Leu	Met	Asp	Lys	Pro
65					70					75					80
Arg	Thr	Pro	Ala	Lys	Arg	Gln	Gln	Asn	Lys	Glu	Thr	Leu	Glu	Leu	Ala
				85					90					95	
Thr	Lys	Ile	Arg	Ala	Glu	Arg	Glu	Gln	Glu	Phe	Lys	Glu	Ser	Met	Leu
			100				105						110		
Gly	Tyr	Arg	Leu	Lys	Lys	Asp	Cys	Thr	Ile	Asn	Phe	Leu	Asp	Tyr	Phe
		115				120						125			
Gln	Ala	Tyr	Ile	Asp	Ser	Tyr	Thr	Lys	Lys	Asp	Cys	Ala	Trp	Cys	Lys
	130					135					140				
Leu	His	Leu	Ala	Val	Ser	Lys	Thr	Ser							
145					150										

<210> 6446  
 <211> 63  
 <212> PRT  
 <213> B.fragilis

<400> 6446

Ser	Ile	Gln	Asn	His	Ser	Gln	Ser	His	Tyr	Ile	Leu	Gly	Lys	Trp	Glu
1				5					10					15	
Gly	Arg	Cys	Trp	Asp	Ile	Glu	Asp	Phe	Ile	Ile	Ser	Leu	Asn	Tyr	Gln
			20					25					30		
Ser	Lys	Leu	Gln	Leu	Thr	Ile	Tyr	Pro	Gln	Gln	Tyr	Leu	Ala	Gln	Ser
		35					40					45			
Glu	Arg	Glu	Val	Gln	Leu	Gln	Thr	Asn	Ser	Asn	Asn	Asn	Thr	Asn	
	50					55					60				

<210> 6447  
 <211> 848  
 <212> PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6447

Thr	Asn	Arg	Lys	Met	Lys	Asn	Ala	Ile	Val	Ser	Leu	Leu	Leu	Leu	Leu
1			5					10						15	
Met	Val	Thr	Gln	Tyr	Val	Thr	Ala	Gln	Lys	Lys	Val	Ile	Lys	Ile	Ala
			20					25					30		
Cys	Ile	Gly	Asn	Ser	Ile	Thr	Tyr	Gly	Val	Gly	Thr	Arg	Asn	Pro	Ala
		35					40					45			
Lys	Asp	Ser	Tyr	Pro	Ala	Val	Leu	Gly	Gln	Met	Leu	Gly	Asp	Gly	Tyr
	50					55					60				
Glu	Val	Arg	Asn	Phe	Gly	Val	Ser	Ala	Arg	Thr	Met	Leu	Met	Lys	Gly
65				70						75					80
Asp	His	Pro	Tyr	Met	Lys	Glu	Glu	Arg	Tyr	Arg	Gln	Ala	Leu	Ala	Tyr
				85					90					95	
Asn	Pro	Asp	Ile	Val	Thr	Ile	Lys	Leu	Gly	Thr	Asn	Asp	Thr	Lys	Pro
			100					105					110		
Gln	Asn	Trp	Arg	Tyr	Lys	Ser	Asp	Phe	Lys	Lys	Asp	Met	Glu	Thr	Met
		115					120					125			
Ile	Arg	Thr	Ile	Arg	Ala	Leu	Pro	Ser	Lys	Pro	Glu	Ile	Tyr	Leu	Cys
130						135						140			
Tyr	Pro	Ile	Pro	Ala	Tyr	Ala	Val	Gln	Trp	Gly	Ile	Asn	Asp	Ser	Thr
145					150					155					160
Ile	Val	His	Gly	Val	Met	Pro	Val	Ile	Asp	Gln	Leu	Ala	Ala	Lys	Tyr
				165					170					175	
Arg	Leu	Lys	Val	Ile	Asp	Leu	His	Thr	Pro	Leu	Ile	Gly	Met	Lys	Glu
			180					185					190		
Cys	Phe	Ala	Asp	His	Val	His	Pro	Asn	Glu	Lys	Ala	Ala	Ala	Cys	Ile
		195					200					205			
Ala	Arg	Val	Ile	Tyr	Arg	Gln	Leu	Thr	Gly	Lys	Glu	Ala	Pro	Glu	His
	210					215					220				
Val	Ser	Gln	Pro	Phe	Pro	Gly	His	Lys	Ser	Lys	Trp	Gln	Gly	Phe	Asp
225				230						235					240
Gln	Tyr	Thr	Phe	Thr	Tyr	Gln	Asp	Arg	Gln	Ala	Ile	Val	Val	Cys	Pro
				245					250					255	
Glu	Arg	Ala	Ala	Ala	Gly	Asn	Pro	Trp	Ile	Trp	Arg	Pro	Ala	Phe	Phe
		260						265					270		
Gly	Ala	Phe	Ala	Ser	Val	Asp	Glu	Ala	Leu	Leu	Lys	Arg	Gly	Phe	His
		275					280					285			
Val	Ala	Tyr	Tyr	Asp	Leu	Thr	His	Leu	Tyr	Gly	Ser	Pro	Arg	Ala	Arg
	290					295					300				
Lys	Ser	Gly	Thr	Asp	Phe	Tyr	Trp	Asn	Met	Val	Gln	Met	Tyr	Gly	Leu
305					310					315					320
Ser	Pro	Arg	Val	Thr	Leu	Glu	Gly	Phe	Ser	Arg	Gly	Gly	Leu	Phe	Ala
				325					330					335	
Tyr	Asn	Trp	Ala	Ala	Asp	His	Pro	Asp	Lys	Val	Ala	Cys	Ile	Tyr	Val
			340					345					350		
Asp	Ala	Pro	Val	Cys	Asp	Val	Phe	Ser	Trp	Pro	Gly	Arg	Ser	Ser	Gly
		355					360					365			
Asn	Ala	Gly	Leu	Trp	Lys	Gly	Met	Leu	Asp	Glu	Trp	Gly	Leu	Thr	Glu
370						375						380			
Ala	Arg	Met	Asn	Thr	Phe	Pro	Gly	Asn	Pro	Ile	Asp	Arg	Leu	Lys	Pro
385					390					395					400
Leu	Ala	Asp	Ala	Arg	Ile	Pro	Val	Ile	Cys	Val	Cys	Gly	Asp	Ser	Asp
				405					410					415	
Arg	Val	Val	Pro	Phe	Ser	Glu	Asn	Ser	Ala	Val	Val	Arg	Gln	Arg	Tyr
			420					425					430		
Thr	Ala	Met	Gly	Ala	Pro	Phe	Glu	Leu	Ile	Leu	Lys	Pro	Gly	Val	Asp
		435					440						445		



His	His	Pro	His	Ser	Leu	Glu	Asn	Pro	Thr	Pro	Val	Val	Asp	Phe	Ile
450						455				460					
Val	Arg	His	Gln	Ala	Gly	Tyr	Glu	Ala	Gly	Gln	Cys	Tyr	Thr	Leu	Arg
465					470					475					480
Gly	Asn	Tyr	Gln	Asn	Ser	Tyr	Arg	Lys	Phe	Glu	Lys	Glu	Arg	Val	Gly
				485					490					495	
Thr	Val	Ala	Phe	Leu	Gly	Gly	Ser	Ile	Thr	Glu	Met	Lys	Gly	Trp	Arg
			500					505					510		
Asp	Met	Ile	Cys	Glu	Asp	Leu	Lys	Gln	Arg	Phe	Pro	Tyr	Thr	Lys	Phe
		515					520					525			
Thr	Phe	Val	Ala	Ala	Gly	Ile	Pro	Ser	Thr	Gly	Ser	Thr	Pro	Gly	Ala
	530					535					540				
Phe	Arg	Leu	Thr	Asp	Asp	Val	Leu	Ser	Lys	Gly	Lys	Val	Asp	Leu	Leu
545					550					555					560
Phe	Val	Glu	Ala	Ala	Val	Asn	Asp	Asp	Thr	Asn	Gly	Phe	Ser	Ala	Ile
				565					570					575	
Glu	Gln	Val	Arg	Gly	Met	Glu	Gly	Ile	Val	Arg	His	Ala	Leu	Val	Ser
			580					585					590		
Asn	Pro	Ser	Met	Asp	Ile	Met	Met	Leu	His	Phe	Ile	Tyr	Asp	Pro	Phe
		595					600					605			
Ile	Pro	Lys	Leu	Asp	Lys	Gly	Gln	Met	Pro	Asp	Val	Ile	Leu	Asn	His
	610					615					620				
Glu	Arg	Val	Ala	Asn	His	Tyr	Leu	Leu	Pro	Ser	Val	Asn	Leu	Ala	Ser
625					630					635					640
Glu	Ile	Ala	Ala	Arg	Met	Arg	Ser	Gly	Glu	Phe	Thr	Trp	Glu	Gln	Phe
				645					650					655	
Gly	Gly	Thr	His	Pro	Asn	Pro	Leu	Gly	His	Ala	Tyr	Tyr	Ala	Ala	Thr
			660					665					670		
Ile	Asn	Lys	Val	Leu	Asp	Glu	Met	Tyr	Ala	Pro	Cys	Ala	Thr	Ala	Lys
		675					680					685			
Asp	Ala	Ala	Lys	Pro	His	Ala	Leu	Pro	Ala	Val	Pro	Leu	Asp	Ala	Tyr
		690				695					700				
Ser	Tyr	Thr	Asn	Gly	Arg	Leu	Val	Asp	Ile	Arg	Gln	Ala	His	Ile	Gly
705					710					715					720
Lys	Gly	Trp	Gln	Leu	Val	Ala	Pro	Trp	Thr	Pro	Arg	Leu	Ala	Ala	Glu
			725						730					735	
Thr	Arg	Pro	Gly	Phe	Val	Asp	Val	Pro	Met	Leu	Glu	Thr	Asn	Arg	Pro
			740					745					750		
Gly	Ala	Lys	Leu	Thr	Leu	Asp	Phe	Glu	Gly	Thr	Ala	Val	Gly	Ile	Phe
		755					760					765			
Cys	Val	Ser	Gly	Pro	Ala	Ala	Gly	Ile	Leu	Glu	Tyr	Ser	Val	Asp	Gly
	770					775					780				
Ala	Pro	Phe	Lys	Lys	Leu	Asp	Thr	Phe	Thr	Ala	Trp	Ser	Gly	Gly	Leu
785					790					795					800
Tyr	Ile	Pro	Trp	Val	Tyr	Met	Phe	Asp	Thr	Glu	Leu	Pro	Met	Gly	Lys
				805					810					815	
His	Arg	Leu	Thr	Leu	Arg	Met	Ser	Lys	Asp	His	His	Pro	Gln	Ser	Lys
			820					825					830		
Gly	Thr	Ser	Cys	Gln	Ile	Arg	Gln	Phe	Val	Val	Asn	Asp	Ser	Cys	Glu
		835					840					845			

&lt;210&gt; 6448

&lt;211&gt; 73

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6448

Arg	Arg	Thr	Leu	Glu	Leu	Trp	Asp	Arg	Asp	Val	Glu	Arg	Trp	Ile	Asn
1				5					10					15	

Ser Glu Arg Val Pro Val Tyr Ser Pro Ile Thr Tyr Phe Leu Tyr Asp  
 20 25 30  
 Leu Pro Arg Trp Asp Gly Lys Asp Tyr Ile Arg Ala Leu Ala Arg Tyr  
 35 40 45  
 Val Arg Thr Phe Arg Arg Ile Gly Tyr Lys Arg Thr Glu Ala Leu Cys  
 50 55 60  
 Phe Val His Ser Asp Gln Gln Ser Gln  
 65 70

<210> 6449

<211> 397

<212> PRT

<213> B.fragilis

<400> 6449

Thr Leu Met Lys Lys Leu Met Ala Met Leu Leu Leu Ala Gly Ser Ile  
 1 5 10 15  
 Gln Gly Val Tyr Ala Gln Lys Thr Glu Lys Lys Glu Met Phe Leu Glu  
 20 25 30  
 Asn Lys Ser Leu Tyr Glu Glu Leu Thr Asn Val Gln Lys Lys Thr Asp  
 35 40 45  
 Lys Phe Asn Leu Tyr Leu Asn Met Gln Gly Ser Phe Asp Ala Asn Phe  
 50 55 60  
 Arg Asp Gly Phe Asp Glu Gly Val Phe Lys Met Arg Gln Leu Arg Ile  
 65 70 75 80  
 Glu Ala Lys Gly Asn Leu Asn Ser Trp Leu Ser Tyr Arg Tyr Arg Gln  
 85 90 95  
 Arg Leu Asn Arg Ser Asn Glu Gly Gly Gly Met Ile Asp Asn Ile Pro  
 100 105 110  
 Thr Ser Ile Asp Tyr Ala Gly Ile Gly Val Lys Leu Asn Asp Gln Phe  
 115 120 125  
 Ser Phe Phe Ala Gly Lys Gln Cys Thr Ala Tyr Gly Gly Phe Glu Phe  
 130 135 140  
 Asp Leu Asn Pro Ile Asp Ile Tyr Gln Tyr Ser Asp Met Ile Glu Asn  
 145 150 155 160  
 Met Ser Asn Phe Met Thr Gly Leu Asn Ile Gly Tyr Asn Ile Thr Pro  
 165 170 175  
 Thr Gln Gln Leu Asn Leu Gln Ile Leu Asn Ser Arg Asn Ser Ser Phe  
 180 185 190  
 Asp Lys Thr Tyr Gly Ile Thr Glu Asp Ser Glu Gly Lys Leu Pro Asp  
 195 200 205  
 Leu Lys Ser Gly Lys Met Pro Leu Val Tyr Thr Leu Asn Trp Asn Gly  
 210 215 220  
 Asn Phe Asn Glu Val Phe Lys Thr Arg Trp Ser Ala Ser Val Met Ser  
 225 230 235 240  
 Glu Ala Lys Gly Lys Asn Leu Tyr Tyr Tyr Ala Val Gly Asn Glu Leu  
 245 250 255  
 Asn Leu Asp Lys Phe Asn Met Phe Val Asp Phe Met Tyr Ser Gln Glu  
 260 265 270  
 Gly Ile Asp Arg Asn Gly Thr Ile Thr Gly Ile Val Gly Asn Ala Gly  
 275 280 285  
 Gly His Asn Ala Phe Asn Ala Gly Tyr Leu Ser Val Val Thr Lys Leu  
 290 295 300  
 Asn Tyr Arg Phe Leu Pro Lys Trp Asn Ala Phe Val Lys Gly Met Tyr  
 305 310 315 320  
 Glu Thr Ala Ser Val Thr Lys Ala Ala Asp Gly Ile Glu Lys Gly Asn  
 325 330 335  
 Tyr Arg Thr Ser Trp Gly Tyr Leu Ala Gly Val Glu Phe Tyr Pro Met  
 340 345 350

Lys Thr Asn Leu His Phe Phe Leu Thr Tyr Val Gly Arg Ser Tyr Asp  
                   355                                  360                                  365  
 Phe Thr His Arg Ala Lys Val Leu Gly Gln Glu Asn Tyr Ser Thr Asn  
                   370                                  375                                  380  
 Arg Leu Ser Leu Gly Phe Ile Tyr Gln Leu Pro Met Phe  
 385                                  390                                  395

<210> 6450  
 <211> 62  
 <212> PRT  
 <213> B.fragilis

<400> 6450  
 Val Thr Arg Lys Asn Asn Ile Gly Arg Asn Ile Leu Ser Ser Gln Glu  
 1                  5                                  10                                  15  
 Ile Ser Asp Ser Tyr Glu Arg Lys Asn Ile Lys Tyr Arg Asp Arg Pro  
                   20                                  25                                  30  
 Ser Met Gln Leu Leu Pro Gly Leu Gln Asn Thr Pro Ser Ala Gly Lys  
                   35                                  40                                  45  
 Cys Asn Arg Pro Val Lys Glu Arg Ser Gly Thr Ala Asn Tyr  
                   50                                  55                                  60

<210> 6451  
 <211> 178  
 <212> PRT  
 <213> B.fragilis

<400> 6451  
 Thr Glu Arg Lys Lys Asn Met Glu Asn Val Ile Gln Ile Gln Tyr Tyr  
 1                  5                                  10                                  15  
 Gln Ser Pro Cys Gly Glu Leu Ile Leu Gly Ala Tyr Arg Glu Lys Leu  
                   20                                  25                                  30  
 Cys Leu Cys Asp Trp Lys Ile Glu Glu Arg Arg Ile Ile Ile Asp Arg  
                   35                                  40                                  45  
 Arg Ile Gln Lys Glu Leu Gln Ala Ser Tyr Lys Glu Gly Ile Ser Glu  
                   50                                  55                                  60  
 Val Ile Thr Arg Thr Ile Gly Gln Leu Asp Glu Tyr Phe Ala Gly Arg  
 65                  70                                  75                                  80  
 Arg Thr Thr Phe Asp Ile Pro Leu Leu Leu Val Gly Thr Asp Phe Gln  
                   85                                  90                                  95  
 Lys Thr Val Trp Asn Glu Leu Leu Asn Ile Pro Tyr Gly Lys Thr Ile  
                   100                                  105                                  110  
 Ser Tyr Ala Gly Leu Ser Gln Lys Leu Gly Asn Pro Lys Ala Ile Arg  
                   115                                  120                                  125  
 Ala Ile Ala Ser Ala Asn Gly Ala Asn Pro Ile Ser Ile Leu Val Pro  
                   130                                  135                                  140  
 Cys His Arg Val Ile Gly Ser Asp Arg Lys Leu Val Gly Tyr Gly Gly  
 145                  150                                  155                                  160  
 Gly Leu Pro Ala Lys Lys Ile Leu Leu Asp Leu Glu Ser Ser Asp Arg  
                   165                                  170                                  175  
 Leu Phe

<210> 6452  
 <211> 200  
 <212> PRT  
 <213> B.fragilis

<400> 6452

Cys Val Asn Leu Asp Arg Asn Asn Lys His Thr Ile Ile Met Lys Lys  
 1 5 10 15  
 Ser Leu Val Tyr Thr Lys Thr Gly Asp Lys Gly Thr Thr Gly Leu Ile  
 20 25 30  
 Gly Gly Thr Arg Val Pro Lys Thr His Ile Arg Leu Glu Ala Tyr Gly  
 35 40 45  
 Thr Val Asp Glu Leu Asn Ser Asn Leu Gly Leu Leu Ala Thr Tyr Leu  
 50 55 60  
 Met Asp Glu His Asp Leu Asn Phe Val Gln Ser Val Gln Asp Lys Leu  
 65 70 75 80  
 Phe Ala Ile Gly Ser His Leu Ala Thr Asp Gln Glu Lys Val Gln Leu  
 85 90 95  
 Asn Asp Val Ser Ile Ile Thr Pro Ala Glu Val Glu Ala Ile Glu Arg  
 100 105 110  
 Glu Ile Asp Ala Ala Asp Glu Ile Leu Pro Pro Leu His Ser Phe Ile  
 115 120 125  
 Ile Pro Gly Gly Ser Arg Gly Ser Ala Val Cys His Val Cys Arg Thr  
 130 135 140  
 Val Cys Arg Arg Ala Glu Arg Arg Ile Leu Ala Leu Ser Glu Ser Cys  
 145 150 155 160  
 Thr Ile Ser Ala Asp Leu Leu Ala Tyr Ile Asn Arg Leu Ser Asp Tyr  
 165 170 175  
 Leu Phe Val Leu Ser Arg Lys Met Asn Phe Asn Glu Gly Lys Asp Glu  
 180 185 190  
 Ile Phe Trp Asn Asn Ser Cys Lys  
 195 200

<210> 6453  
 <211> 78  
 <212> PRT  
 <213> B.fragilis

<400> 6453  
 Glu Ile Asn Asp His Leu Thr Tyr His Ile Pro Ala Ile Tyr Ala Leu  
 1 5 10 15  
 His Ser Lys Cys Thr Glu Phe Pro Asp Glu Thr Ser Arg Arg Val Thr  
 20 25 30  
 Lys Ile Thr Phe Tyr Phe Leu Phe Leu Pro Lys Asp Leu Thr Thr Ala  
 35 40 45  
 Lys Asn Ile Asn Ile Arg Ile Phe Ser Thr Ala Ile Asp Phe His Tyr  
 50 55 60  
 Ile Gln Ser Leu Gln Ser Leu Thr Phe Arg Ser His Thr Pro  
 65 70 75

<210> 6454  
 <211> 92  
 <212> PRT  
 <213> B.fragilis

<400> 6454  
 Arg Arg Ala Asp Pro Arg Thr Leu Pro Glu Leu Leu Ile Glu Lys His  
 1 5 10 15  
 Asp Ile Leu Ile Glu Lys Ile Gly Thr Arg Leu Lys Thr His Ala Thr  
 20 25 30  
 Glu Thr Asp Ile Ala Arg Leu Phe Ile Ala Leu Val Glu Tyr Arg Phe  
 35 40 45  
 Met Arg Lys Cys Pro Ile Lys Thr Phe Arg Asn Ala Cys Thr Thr Ser  
 50 55 60  
 Leu Met Asn Lys Lys Ser Phe Met Lys Glu Val Phe Arg Lys His Thr

65                      70                      75                      80  
 Lys Ile Ser Phe Arg His Leu Glu Thr Ala Lys Ser  
                          85                      90

<210> 6455  
 <211> 172  
 <212> PRT  
 <213> B.fragilis

<400> 6455  
 Ile Leu Leu Glu Leu Asp Gln Gly Glu Arg Val Met Asn Asp Arg Lys  
 1                      5                      10                      15  
 Ile Leu Val Ala Tyr Phe Ser Cys Ser Gly Val Thr Lys Ala Val Ala  
                          20                      25                      30  
 Glu Lys Leu Ala Ala Ile Thr Gly Ala Asp Leu Tyr Glu Ile Lys Pro  
                          35                      40                      45  
 Glu Val Pro Tyr Thr Glu Ala Asp Leu Asp Trp Asn Asp Lys Lys Ser  
                          50                      55                      60  
 Arg Ser Ser Val Glu Met Arg Asp Ala Leu Ser Arg Pro Ala Ile Ser  
 65                      70                      75                      80  
 Gly Thr Leu Phe His Pro Glu Glu Tyr Glu Val Leu Phe Val Gly Phe  
                          85                      90                      95  
 Pro Val Trp Trp Tyr Ile Ala Pro Thr Ile Ile Asn Thr Phe Leu Glu  
                          100                      105                      110  
 Ser Tyr Asp Phe Ala Gly Lys Ile Val Val Pro Phe Ala Thr Ser Gly  
                          115                      120                      125  
 Gly Ser Gly Ile Gly Asn Cys Glu Lys Asn Leu His Lys Ala Tyr Pro  
                          130                      135                      140  
 Asp Ile Val Trp Lys Asp Gly Lys Leu Leu Asn Gly Arg Ile Thr Arg  
 145                      150                      155                      160  
 Asp Leu Val Thr Glu Trp Phe Glu Lys Ile Arg Leu  
                          165                      170

<210> 6456  
 <211> 448  
 <212> PRT  
 <213> B.fragilis

<400> 6456  
 Asn Val Ala Asp Phe Arg Ser Leu His Phe Leu Arg Arg Gln Asn His  
 1                      5                      10                      15  
 Phe Met Ile Asn Glu Ser Pro Ala Leu Ala Ser Gly Ile Phe Cys Ile  
                          20                      25                      30  
 Phe Val Leu Thr Met Lys Lys Tyr Val Asp Val Ile Leu Pro Leu Pro  
                          35                      40                      45  
 Leu Pro Arg Cys Phe Thr Tyr Ser Leu Pro Asp Glu Gly Ala Glu Glu  
                          50                      55                      60  
 Val Gln Ile Gly Cys Arg Val Val Val Pro Phe Gly Arg Lys Lys Tyr  
 65                      70                      75                      80  
 Tyr Thr Ala Ile Val Arg Asn Val His His Tyr Ala Pro Thr Glu Tyr  
                          85                      90                      95  
 Glu Val Lys Glu Ile Ser Thr Val Leu Asp Thr Ser Pro Ile Leu Leu  
                          100                      105                      110  
 Pro Gly Gln Phe Arg Phe Trp Glu Trp Leu Ala Asp Tyr Tyr Leu Cys  
                          115                      120                      125  
 Thr Gln Gly Asp Val Tyr Lys Ala Ala Leu Pro Ser Gly Leu Lys Leu  
                          130                      135                      140  
 Glu Ser Glu Thr Ile Val Glu Tyr Asn Pro Asp Phe Glu Ala Asp Ala  
 145                      150                      155                      160

Pro Leu Ser Glu Arg Glu Gln Leu Val Leu Asp Leu Leu Ala Lys Glu  
 165 170 175  
 Pro Glu Gln Cys Val Thr Lys Leu Glu Lys Glu Ser Gly Leu Lys Asn  
 180 185 190  
 Ile Leu Thr Val Ile Lys Ser Leu Leu Asp Lys Glu Ala Leu Phe Val  
 195 200 205  
 Lys Glu Glu Leu Arg Arg Thr Tyr Lys Pro Lys Thr Glu Ala Arg Val  
 210 215 220  
 Arg Leu Ala Ala Asp Ala Ser Gly Glu Glu Asn Leu Arg Arg Ile Phe  
 225 230 235 240  
 Asp Glu Leu Glu Arg Ala Pro Lys Gln Leu Ala Leu Leu Met Lys Tyr  
 245 250 255  
 Val Glu Leu Ser Gly Val Leu Gly Asp Gly Ala Ser Lys Glu Val Ser  
 260 265 270  
 Lys Lys Glu Leu Leu Gln Arg Ala Ser Ala Ser Pro Ala Ile Phe Asn  
 275 280 285  
 Gly Leu Val Glu Lys Gln Ile Phe Glu Val Tyr Tyr Gln Glu Ile Gly  
 290 295 300  
 Arg Leu Asn Arg Leu Val Gly Lys Thr Val Glu Leu Asn Val Leu Asn  
 305 310 315 320  
 Glu His Gln Gln Arg Ala Tyr His Glu Phe Met Gln Ser Phe Gln Glu  
 325 330 335  
 Lys Asn Val Cys Leu Leu His Gly Val Thr Ser Ser Gly Lys Thr Glu  
 340 345 350  
 Val Tyr Ile His Leu Ile Glu Glu Thr Leu Arg Gln Gly Arg Gln Val  
 355 360 365  
 Leu Tyr Leu Leu Pro Glu Ile Ala Leu Thr Thr Gln Ile Thr Glu Arg  
 370 375 380  
 Leu Lys Arg Val Phe Gly Ser Arg Val Gly Asn Leu Ser Leu Gln Val  
 385 390 395 400  
 Pro Arg Arg Arg Glu Ser Arg Asp Leu Ala Lys Ala Val Asp Gly Gly  
 405 410 415  
 Gly Leu Arg His His Ser Gly Gly Thr Leu Phe Gly Val Pro Pro Val  
 420 425 430  
 Ser Glu Ser Arg Thr Gly His Cys Gly Arg Gly Thr Arg Lys Tyr Val  
 435 440 445

&lt;210&gt; 6457

&lt;211&gt; 328

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6457

Lys Thr Lys Glu Glu Tyr Ser Met Ile Lys Lys Leu Cys Ile Ile Leu  
 1 5 10 15  
 Leu Ser Val Cys Thr Val Ala Pro Val Met Ala Gln Gln Tyr Ser Ser  
 20 25 30  
 Ser Asp Asp Ala Ser Phe Ala Pro Lys Lys Gly Gln Trp Gln Val Ser  
 35 40 45  
 Met Val Met Gly Ser Ser Gln Met Phe Asn Asn Asn Thr Glu Asn Tyr  
 50 55 60  
 Leu Leu Pro Thr Tyr Trp Asn Gly Gln Asn Phe Ser Phe Pro Asn Val  
 65 70 75 80  
 Gly Leu Gly Asn Asn Thr Ser Gly Asn Gln Ser Ser Asp Pro Ala Thr  
 85 90 95  
 Tyr Leu Gln Leu Gly Asp Leu Asn Ser Asn Asn Leu Val Asn Ile Ile  
 100 105 110  
 Gly Ile Gln Gly Lys Tyr Phe Leu Thr Asp Arg Trp Asp Val Asn Leu  
 115 120 125

Met	Phe	Ser	Met	Asn	Ile	Gly	Val	Thr	Pro	Lys	Lys	Asp	Tyr	Ile	Glu
130						135					140				
Gly	Asp	Lys	Thr	Val	Thr	Asp	Met	Gln	Ile	Pro	Ala	Leu	Gln	Tyr	Leu
145						150				155					160
Glu	Gly	Arg	Ile	Lys	Asn	Asn	Trp	Ser	Val	Asn	Ile	Gly	Ser	Asn	Tyr
				165				170						175	
Tyr	Phe	Asn	Thr	Lys	Asn	Glu	Arg	Ile	Asn	Leu	Tyr	Val	Gly	Gly	Leu
			180					185					190		
Leu	Gly	Trp	Gln	Met	Gly	Arg	Ile	Glu	Thr	Thr	Leu	Pro	Tyr	Thr	Gly
		195						200				205			
Ile	Met	Val	Ser	Asp	Lys	Asp	Met	Asn	Thr	Asp	Gly	Thr	Asp	Thr	Asp
		210				215					220				
Leu	Gln	Pro	Thr	Pro	Asp	Glu	Asn	Gly	Gln	Asp	Asn	Gly	Pro	Val	Val
225					230					235					240
Asp	Asp	Asn	Asp	Val	Thr	Gly	Thr	Pro	Leu	Glu	Val	Tyr	Ile	Pro	Asn
				245					250					255	
Ser	Arg	Ala	Gly	Gln	Ile	Phe	Gly	Leu	Arg	Ala	Ala	Thr	Val	Ala	Gly
			260					265					270		
Ile	Glu	Tyr	Ser	Ile	Gly	Lys	Gly	Leu	Ile	Leu	Gly	Phe	Glu	Val	Gln
		275					280					285			
Pro	Val	Ala	Tyr	Arg	Tyr	Asp	Met	Ile	Gln	Ile	Ile	Pro	Lys	Gly	Thr
		290				295					300				
Pro	Val	Tyr	Lys	Val	Gly	His	His	Asn	Ile	Asn	Leu	Phe	Ala	Leu	Pro
305					310					315					320
Asn	Leu	Lys	Leu	Gly	Phe	Arg	Phe								
				325											

&lt;210&gt; 6458

&lt;211&gt; 323

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6458

Val	Met	Lys	Glu	Leu	Lys	Arg	Leu	Ser	Phe	Val	Val	Val	Thr	Leu	Leu
1				5					10					15	
Leu	Ser	Thr	Met	Met	Ala	Phe	Ala	Gln	Lys	Pro	Asn	Ile	His	Ile	Leu
			20					25					30		
Ala	Thr	Gly	Gly	Thr	Ile	Ala	Gly	Thr	Gly	Gly	Ser	Ala	Thr	Ser	Thr
		35					40					45			
Asn	Tyr	Thr	Ala	Gly	Gln	Val	Ala	Ile	Ser	Thr	Leu	Leu	Asp	Ala	Val
		50				55					60				
Pro	Glu	Leu	Lys	Asp	Ile	Ala	Asn	Val	Thr	Gly	Glu	Gln	Ile	Val	Arg
65					70					75					80
Ile	Ala	Ser	Gln	Asp	Met	Ser	Asp	Glu	Val	Trp	Leu	Ile	Leu	Ala	Lys
			85						90					95	
Lys	Ile	Asn	Gln	Leu	Leu	Lys	Arg	Pro	Asp	Ile	Asp	Gly	Ile	Val	Ile
			100					105					110		
Thr	His	Gly	Thr	Asp	Thr	Met	Glu	Glu	Thr	Ala	Tyr	Phe	Leu	Asn	Leu
		115				120						125			
Thr	Val	Lys	Ser	Asn	Lys	Pro	Val	Val	Leu	Val	Gly	Ala	Met	Arg	Pro
		130				135					140				
Ser	Thr	Ala	Leu	Ser	Ala	Asp	Gly	Pro	Leu	Asn	Leu	Tyr	Asn	Ala	Val
145					150					155					160
Val	Thr	Ala	Gly	Ala	Lys	Glu	Ser	Ile	Gly	Lys	Gly	Val	Leu	Ile	Ala
				165					170					175	
Met	Asn	Gly	Leu	Ile	Leu	Gly	Ala	Glu	Ser	Ala	Ile	Lys	Met	Asn	Thr
			180					185					190		
Ile	Asp	Val	Gln	Thr	Phe	Gln	Ala	Pro	Asn	Ser	Gly	Ala	Leu	Gly	Tyr
		195					200						205		

Ile Phe Asn Gly Lys Val Phe Tyr Asn Gln Ala Pro Leu Lys Lys His  
 210 215 220  
 Thr Thr Gln Ser Val Phe Asp Val Thr Asn Leu Asn Ser Leu Pro Lys  
 225 230 235 240  
 Val Gly Ile Val Tyr Ser Tyr Ser Asn Ile Asp Pro Asp Met Val Thr  
 245 250 255  
 Pro Leu Leu His Asp Tyr Lys Gly Ile Ile His Ala Gly Val Gly  
 260 265 270  
 Asn Gly Asn Phe His Lys Asn Ile Leu Pro Val Leu Leu Glu Ala Arg  
 275 280 285  
 Lys Lys Gly Ile Leu Val Val Arg Ser Ser Arg Val Pro Thr Gly Pro  
 290 295 300  
 Thr Thr Met Asp Ala Glu Val Asp Asp Thr Gln Tyr Gln Phe Leu Leu  
 305 310 315 320  
 Leu Arg Asn

&lt;210&gt; 6459

&lt;211&gt; 392

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6459

Lys Lys Gly Glu Lys Lys Asn Lys Arg Ser His Lys His Phe Tyr Phe  
 1 5 10 15  
 Gln Arg Ile Asn Arg Ile Leu Ala Glu Thr Phe Lys Thr Val Asn Ile  
 20 25 30  
 Met Thr Ser Lys Asp Asn Tyr Cys Val Ile Met Gly Gly Gly Ile Gly  
 35 40 45  
 Ser Arg Phe Trp Pro Phe Ser Arg Lys Thr Met Pro Lys Gln Phe Leu  
 50 55 60  
 Asp Phe Phe Gly Thr Gly Arg Ser Leu Leu Gln Gln Thr Phe Asp Arg  
 65 70 75 80  
 Phe Asn Lys Ile Ile Pro Thr Glu Asn Ile Leu Ile Val Thr Asn Ala  
 85 90 95  
 Ile Tyr Ala Asp Leu Val Lys Glu Gln Leu Pro Glu Leu Asp Pro Lys  
 100 105 110  
 Gln Ile Leu Leu Glu Pro Ala Arg Asn Thr Ala Pro Cys Ile Ala  
 115 120 125  
 Trp Ala Ser Tyr His Ile Arg Ala Leu Asn Pro Asn Ala Asn Ile Val  
 130 135 140  
 Val Ala Pro Ser Asp His Leu Ile Leu Lys Glu Gly Glu Phe Leu Ala  
 145 150 155 160  
 Ala Ile Glu Lys Gly Leu Asp Phe Val Ser Lys Ser Asp Lys Leu Leu  
 165 170 175  
 Thr Leu Gly Ile Lys Pro Asn Arg Pro Glu Thr Gly Tyr Gly Tyr Ile  
 180 185 190  
 Gln Ile Ala Glu Gln Glu Gly Asp Asn Phe Tyr Lys Val Lys Thr Phe  
 195 200 205  
 Thr Glu Lys Pro Glu Leu Glu Leu Ala Lys Val Phe Val Glu Ser Gly  
 210 215 220  
 Glu Phe Tyr Trp Asn Ser Gly Leu Phe Met Trp Asn Val Asn Thr Ile  
 225 230 235 240  
 Ile Lys Ala Gly Glu Thr Leu Leu Pro Glu Leu Ala Ser Lys Leu Ala  
 245 250 255  
 Pro Gly Arg Glu Ile Tyr Gly Thr Pro Glu Glu Lys Asp Phe Ile Glu  
 260 265 270  
 Glu Asn Phe Pro Ala Cys Pro Asn Val Ser Ile Asp Phe Gly Ile Met  
 275 280 285



Glu Lys Ala Asp Asn Val Tyr Val Ser Leu Gly Asp Phe Gly Trp Ser  
 290 295 300  
 Asp Leu Gly Thr Trp Gly Ser Leu Tyr Asp Leu Ser Pro Lys Asp Glu  
 305 310 315 320  
 Gln Arg Asn Val Thr Leu Lys Cys Asp Ser Leu Ile Tyr Asn Ser Asn  
 325 330 335  
 Asp Asn Ile Val Val Leu Pro Lys Gly Lys Leu Ala Val Ile Glu Gly  
 340 345 350  
 Leu Glu Gly Phe Leu Val Ala Glu Ser Asp Asn Val Leu Leu Ile Cys  
 355 360 365  
 Lys Lys Asp Glu Glu His Ala Ile Arg Lys Tyr Val Asn Asp Ala Gln  
 370 375 380  
 Met Lys Leu Gly Glu Asp Tyr Ile  
 385 390

<210> 6460  
 <211> 197  
 <212> PRT  
 <213> B.fragilis

<400> 6460  
 Leu Phe Met Glu Ser Glu Lys Glu Lys Met Gly Thr Gly Arg Leu Tyr  
 1 5 10 15  
 Asp Ala Asn Tyr Asp Thr Glu Leu Ile Ala Glu Arg Gln Ala Cys Lys  
 20 25 30  
 Glu Leu Cys Tyr Thr Leu Asn His Leu Pro Pro Ser Gln Ile Ala Glu  
 35 40 45  
 Arg Glu Ala Ile Ile Arg Arg Leu Phe Cys Lys Thr Lys Glu Arg Phe  
 50 55 60  
 Leu Leu Glu Gln Pro Phe Tyr Cys Asp Tyr Gly Tyr Asn Ile Glu Ile  
 65 70 75 80  
 Gly Glu Asn Phe Tyr Ala Asn Met Asn Cys Val Ile Leu Asp Glu Ala  
 85 90 95  
 Lys Val Thr Phe Gly Asp Asn Val Phe Ile Ala Pro Ser Cys Gly Phe  
 100 105 110  
 Tyr Thr Ala Gly His Pro Leu Asp Val Glu Gln Arg Asn Arg Gly Leu  
 115 120 125  
 Glu Tyr Ala Arg Pro Ile Arg Val Gly Asn Asn Val Trp Ile Gly Ala  
 130 135 140  
 Gln Val Cys Val Leu Pro Gly Val Thr Ile Gly Asp Asn Thr Val Ile  
 145 150 155 160  
 Gly Ala Gly Ser Val Val Asn Arg Asp Ile Pro Ala Asn Val Ile Ala  
 165 170 175  
 Ala Gly Asn Pro Cys Arg Val Ile Arg Glu Ile Thr Glu Glu Asp Lys  
 180 185 190  
 Thr Lys Tyr Leu Leu  
 195

<210> 6461  
 <211> 462  
 <212> PRT  
 <213> B.fragilis

<400> 6461  
 Arg His Met Glu Lys Gln Asn Asn His Ile Asp Arg Arg Gly Phe Leu  
 1 5 10 15  
 Lys Ile Val Gly Ile Ser Ala Ala Thr Thr Thr Ala Ala Leu Tyr Gly  
 20 25 30  
 Cys Gly Ser Gly Thr Lys Ser Ser Gln Gly Arg Asn Ala Ser Ser Pro

35	40	45
Val Pro Thr Asp Gln Met Thr Tyr Arg Ser Val Gly Gly Ile Lys Asp		
50	55	60
Lys Val Ser Leu Leu Gly Tyr Gly Cys Met Arg Trp Pro Thr Val Pro		
65	70	75
Ser Pro Glu Gly Lys Gly Asp Leu Ile Asn Gln Glu Ala Val Asn Glu		
	85	90
Leu Val Asp Tyr Ala Ile Ala His Gly Val Asn Tyr Phe Asp Thr Ser		
	100	105
Pro Val Tyr Val Gln Gly Trp Ser Glu Lys Ala Thr Gly Ile Ala Leu		
	115	120
Lys Arg His Pro Arg Glu Lys Leu Tyr Ile Ala Thr Lys Leu Ser Asn		
	130	135
Phe Ser Asn Phe Ser Arg Glu Asn Ser Leu Ala Met Tyr His Gln Ser		
145	150	155
Phe Lys Asp Met Gln Val Glu Tyr Phe Asp Tyr Tyr Leu Leu His Ala		
	165	170
Ile Gly Gly Gly Gly Met Lys Val Phe Asn Glu Arg Tyr Ile Asp Asn		
	180	185
Gly Met Leu Asp Phe Leu Leu Lys Glu Arg Glu Ala Gly Arg Ile Arg		
	195	200
His Leu Gly Trp Ser Phe His Gly Asp Val Glu Val Phe Asp Gln Val		
	210	215
Leu Ala Met His Asp Thr Ala Lys Trp Asp Phe Val Gln Ile Gln Leu		
225	230	235
Asn Tyr Val Asp Trp Arg His Ala Thr Gly Asn Asn Val Asn Ala Glu		
	245	250
Tyr Leu Tyr Gly Glu Leu Ala Lys Arg Asn Ile Ala Ala Val Ile Met		
	260	265
Glu Pro Leu Leu Gly Gly Arg Leu Ser Asn Val Pro Glu His Ile Val		
	275	280
Gly Arg Leu Lys Gln Arg Arg Pro Glu Asp Ser Val Ala Ser Trp Ala		
	290	295
Phe Arg Phe Ala Gly Ser Pro Glu Leu Val Leu Thr Val Leu Ser Gly		
305	310	315
Met Thr Tyr Met Glu His Leu Gln Asp Asn Ile Arg Thr Tyr Ser Pro		
	325	330
Leu Val Pro Leu Thr Asp Asp Asp Lys Glu Tyr Leu Glu Glu Thr Ala		
	340	345
Gln Leu Met Met Gln Tyr Pro Thr Ile Pro Cys Asn Asp Cys Lys Tyr		
	355	360
Cys Met Pro Cys Pro Tyr Gly Ile Asp Ile Pro Ala Ile Leu Val His		
	370	375
Tyr Asn Lys Cys Val Asn Glu Gly Asn Ile Pro Gln Ser Gln Ser Ser		
385	390	395
Glu Asn Tyr Lys Glu Ala Arg Arg Ala Phe Leu Val Gly Tyr Asp Arg		
	405	410
Ser Val Pro Lys Leu Arg Gln Ala Ser His Cys Ile Gly Cys Asn Gln		
	420	425
Cys Thr Pro His Cys Pro Gln Ser Ile His Ile Pro Glu Glu Leu His		
	435	440
Arg Ile Asp Arg Phe Val Glu Gln Leu Lys Gln Gly Thr Leu		
450	455	460

&lt;210&gt; 6462

&lt;211&gt; 61

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6462

Lys Ala Met Glu Gln Gly Val Trp Gln Glu Ile Glu Gln Leu Tyr Gln  
 1 5 10 15  
 Lys Phe Gln Lys Leu Gly Ile Asn Glu Ala Val Asp Tyr Asp Ser Thr  
 20 25 30  
 Thr Cys Ile Leu Leu Leu Pro Ile Pro Gln Pro Leu Lys Ala Gln Arg  
 35 40 45  
 Leu Arg Asn Leu Ile Arg Ser Phe Phe Ser Thr Arg Glu  
 50 55 60

&lt;210&gt; 6463

&lt;211&gt; 66

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6463

Leu Val Ile Cys Ala Gln Glu Pro Asp Asn Leu Gln Lys Thr Leu Thr  
 1 5 10 15  
 Met Leu Ile Glu Glu Arg Tyr Lys Asp Glu Asp Thr Gly Ser Gly Gly  
 20 25 30  
 Val Asn Ser Leu Pro Lys Leu Glu Leu Ser Tyr Ser Ala Gly Val Cys  
 35 40 45  
 Phe Phe Leu Leu Lys Gln Ala Lys Arg Thr Ile Ile Asn Leu Lys Ile  
 50 55 60  
 Lys Lys  
 65

&lt;210&gt; 6464

&lt;211&gt; 385

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6464

Lys Asp Ser Arg Phe Ile Phe Gly Tyr Pro Leu Arg Trp Leu Arg Val  
 1 5 10 15  
 Arg Gly Gly Lys Lys Ala Val Asn Gln Ala Leu Pro Val Ile Asp Met  
 20 25 30  
 Asn Glu Asp Tyr Pro Glu Lys Glu Ile Val Leu Gln Asp Ile Ala Asp  
 35 40 45  
 Ile Ser Tyr Ile Pro Leu Glu Thr Asn Asp Glu Phe Leu Phe Asp Gly  
 50 55 60  
 Ser Val Glu Val Val Thr Asp Gln Tyr Val Ile Thr Lys Gly His Arg  
 65 70 75 80  
 Gly Asn Asp Val Cys Phe Phe Ser Arg Gln Gly Lys Ala Leu Asn Arg  
 85 90 95  
 Ile His Arg Val Gly Asn Gly Pro Gly Glu Tyr Lys Asp Ile Gly Ser  
 100 105 110  
 Met Asp Val Asn Pro Ala Asn Gly Glu Leu Tyr Leu Lys Glu Met Asn  
 115 120 125  
 Arg Gln Gln Ile His Val Tyr Ser Leu Asp Gly Lys Phe Lys His Ser  
 130 135 140  
 Phe Thr Phe Pro Glu Gly Lys Arg Met Ser Arg Met Cys Leu Phe Ser  
 145 150 155 160  
 Pro Asp Tyr Leu Ile Ala Glu Gln Glu Ser Lys Val Pro Asp Asp Gln  
 165 170 175  
 Asp Ala Asn Phe Tyr Pro Tyr Leu Leu Val Ser Thr Arg Asp Gly His  
 180 185 190  
 Leu Asp Ser Leu Asp Tyr Val Gln Lys Arg Asn Ile Leu Val Lys Leu  
 195 200 205

Ile Val Asn Ala Glu Asn His Ser Tyr Ala Tyr Leu Leu Glu Pro Ser  
 210 215 220  
 Leu Ile Arg Asn Gly Ser Arg Phe Tyr Ile Gly Asn Pro Asp Ser Asp  
 225 230 235 240  
 Thr Leu Phe Ala Met Asn Pro Asp Arg Thr Leu Glu Pro Leu Leu Val  
 245 250 255  
 Arg Thr Pro Ser His Ser Glu Glu Gly Asn Lys Tyr Gly Leu Phe Leu  
 260 265 270  
 Arg Gly Ala Ala Gly Ala Tyr Phe Leu Thr Lys Gln Pro Met Glu  
 275 280 285  
 Val Pro Met Asn Ser Ile Glu Ser Leu Asp Leu Lys Ser Glu Glu Trp  
 290 295 300  
 Leu Tyr Asp Cys Arg Thr Gln Glu Val Cys Arg Tyr Leu Leu Lys Asn  
 305 310 315 320  
 Lys Asp Asp Ala Ser Lys Arg Val Asp Gly Ile Met Phe Phe Cys Tyr  
 325 330 335  
 Pro Glu Asp Cys Gly Leu Ala Val Leu Lys Ser Glu Asp Leu Met Asp  
 340 345 350  
 Ala Tyr Glu Ala Gly Gln Leu Ser Gly Glu Leu Lys Glu Ile Ala Ala  
 355 360 365  
 Gly Leu Lys Ala Asp Asp Asn Pro Val Leu Met Leu Ile His Phe Lys  
 370 375 380

Lys  
385

<210> 6465  
 <211> 77  
 <212> PRT  
 <213> B.fragilis

<400> 6465  
 Ile Arg Lys Leu Met Tyr Trp Thr Leu Glu Leu Ala Ser Lys Leu Glu  
 1 5 10 15  
 Asp Ala Pro Trp Pro Ala Thr Lys Asp Glu Leu Ile Asp Tyr Ala Met  
 20 25 30  
 Arg Ser Gly Ala Pro Leu Glu Val Ile Glu Asn Leu Gln Glu Met Glu  
 35 40 45  
 Asp Glu Gly Glu Ile Tyr Glu Ser Ile Glu Asp Ile Trp Pro Asp Tyr  
 50 55 60  
 Pro Ser Lys Glu Asp Phe Phe Phe Asn Glu Glu Glu Tyr  
 65 70 75

<210> 6466  
 <211> 261  
 <212> PRT  
 <213> B.fragilis

<400> 6466  
 Ser Lys Ile Ser Phe Phe Thr Ser Arg Met Asp Ser Ser Gly Glu Ser  
 1 5 10 15  
 Arg Asp Thr Cys Phe Phe Val Asn Tyr Lys Arg Gly Leu Thr Leu Pro  
 20 25 30  
 Lys Thr Glu Leu Asp Ser Met Ser Lys Arg Lys Leu Thr Lys Phe  
 35 40 45  
 Glu Glu Glu Pro Leu Asn Phe Gly Thr Gly Met Trp Asn Val Gly Leu  
 50 55 60  
 Thr Pro Asn Val Cys Arg Cys Thr Leu Leu Leu Pro Thr Ser Cys Met  
 65 70 75 80  
 Thr Cys Leu Val Gly Thr Gly Arg Thr Thr Ser Gly Arg Trp Pro Ala

[illegible]

<400> 6467

Leu 1	Leu	Pro	Ser	Leu 5	His	Arg	Gln	Leu	Tyr 10	Lys	Glu	Arg	Leu	Arg 15	Met
Val	Gln	Ile	Ala 20	Leu	Ser	Arg	Phe	Lys 25	Asp	Phe	Leu	Lys	Glu 30	Gln	Tyr
Pro	Leu	Tyr 35	Glu	Cys	Asn	Ile	Lys 40	Pro	Lys	Phe	Ile	Thr 45	Lys	Asp	Met
Ile	Val 50	Gln	Phe	Val	Asp	Tyr 55	Leu	Gln	Ser	Arg	Ser	Val	Gly	Glu	Gly
Ala 65	Lys	Ser	Ile	Tyr	Gln 70	Arg	Phe	Lys	Lys	Val 75	Ile	Arg	Tyr	Ala	Ile 80
Glu	His	Asp	Val	Ile 85	Leu	Lys	Asp	Pro	Cys 90	Lys	Glu	Val	Ile	Cys 95	Lys
Val	Asp	Asp	Pro 100	Met	Leu	Arg	Lys	Asp 105	Val	Leu	Ser	Leu	Glu 110	Glu	Ile
Gln	Ser	Leu 115	Ile	Asn	Cys	His	Tyr 120	Glu	Asn	Glu	Asn	Pro 125	Met	Val	Arg
Arg	Ala 130	Phe	Ile	Phe	Cys	Leu	Tyr 135	Phe	Gly	Leu	Arg	Phe 140	Cys	Asp	Val
Lys 145	Asp	Leu	Thr	Tyr	Lys 150	Asn	Val	Asp	Tyr	Ser	Asn	Lys	Leu	Leu	Lys 160
Phe	Glu	Gln	Asn 165	Lys	Thr	Lys	Gly	His	Ser 170	Ser	Ala	Ser	Gly	Val 175	Val
Ile	Pro	Leu	Asn 180	Asp	Gly	Leu	Leu	Ser 185	Ile	Ile	Gly	Glu	Ala 190	Pro	Ala
Asn	Gly	Asn 195	Lys	Asp	Val	Leu	Ile 200	Phe	Asp	Leu	Pro	Thr 205	Tyr	Glu	Ser
Cys	Ser 210	Lys	Ser	Leu	Arg	Arg 215	Trp	Val	Lys	Arg	Ala 220	Gly	Ile	Asp	Lys
His	Ile	Ser	Trp	His	Cys	Ala	Arg	His	Ser	Phe	Ala	Val	Asn	Ile	Leu

225                      230                      235                      240  
 Asn Asn Gly Ala Asn Ile Lys Thr Ile Ala Gly Leu Leu Gly His Ser  
                                  245                      250                      255  
 Gly Leu Lys His Thr Lys Lys Tyr Thr Arg Ala Val Asp Lys Leu Lys  
                                  260                      265                      270  
 Glu Glu Ala Ile Asn Ser Leu Pro Glu Leu Lys Leu  
                                  275                      280

<210> 6468

<211> 808

<212> PRT

<213> B.fragilis

<400> 6468

Ile Ala Thr Ser Gln Ser Leu His Arg Met Gln Pro Met Tyr Pro Ala  
 1                      5                      10                      15  
 Leu Ser Ala Ile His Pro His Thr Gly Arg Thr Ala Ser His Arg Ser  
                                  20                      25                      30  
 Phe Cys Arg Thr Ala Gln Ala Gly Asp Thr Met Met Glu Lys Ile Ile  
                                  35                      40                      45  
 Asp Leu Leu His Ser Gly Gly Tyr Ser Cys Val Ile Gly Asn Gly Thr  
                                  50                      55                      60  
 Glu Ile Arg Thr Phe Thr Gln Arg Gly Val Ala Asp Leu Tyr Asp Leu  
 65                      70                      75                      80  
 Phe Arg Gln Asp Pro Ser Phe Met Lys Gly Ala Gly Ile Ala Asp Lys  
                                  85                      90                      95  
 Val Ile Gly Lys Ala Ala Ala Ser Leu Met Val Leu Gly Gly Ile Arg  
                                  100                      105                      110  
 Gln Val Tyr Ala Asp Val Ile Ser Gln Pro Ala Leu Ala Leu Leu Cys  
                                  115                      120                      125  
 Asn Ala Asn Ile Glu Val Ser Tyr Val Arg Leu Val Pro Phe Ile Glu  
                                  130                      135                      140  
 Asn Arg Asp Lys Ser Gly Trp Cys Pro Leu Glu Thr Ala Cys Tyr Gly  
 145                      150                      155                      160  
 Ile Glu Ser Ile Gln Glu Ile Phe Arg Ile Ile Glu Asn Phe Leu Ser  
                                  165                      170                      175  
 Lys Ile Arg Ile Lys Lys Asn Leu Leu Gly Ile Leu Leu Val Cys Ala  
                                  180                      185                      190  
 Phe Leu Ser Ser Ser Leu Gln Ala Gln Val Arg Lys Asp Thr Thr Gln  
                                  195                      200                      205  
 Ala Gly His Asn Tyr Glu Ile Asp Gly Val Val Val Thr Gly Thr Arg  
                                  210                      215                      220  
 Asn Glu Thr Asp Ile Arg His Leu Pro Met Thr Ile Ser Val Val Asn  
 225                      230                      235                      240  
 Arg Glu Thr Ile Gly Gln Arg Ser Glu Pro Ser Leu Leu Pro Thr Leu  
                                  245                      250                      255  
 Thr Glu Gln Val Pro Gly Leu Phe Thr Thr Ser Arg Gly Val Met Gly  
                                  260                      265                      270  
 Tyr Gly Val Ser Asn Gly Ala Ala Gly Gly Ile Ser Leu Arg Gly Ile  
                                  275                      280                      285  
 Gly Gly Ser Pro Thr Thr Gly Leu Leu Val Leu Ile Asp Gly His Pro  
                                  290                      295                      300  
 Gln Tyr Met Gly Leu Met Gly His Pro Ile Ala Asp Ala Tyr Gln Ser  
 305                      310                      315                      320  
 Met Leu Ala Glu Lys Val Glu Val Val Arg Gly Pro Ala Ser Val Leu  
                                  325                      330                      335  
 Tyr Gly Ser Asn Ala Met Gly Gly Val Ile Asn Ile Val Thr Arg Arg  
                                  340                      345                      350  
 Gln Arg Glu Asp Gly Val Arg Thr Gly Val Arg Leu Gly Tyr Gly Ser

1  
 2  
 3  
 4  
 5  
 6  
 7  
 8  
 9  
 10  
 11  
 12  
 13  
 14  
 15  
 16  
 17  
 18  
 19  
 20  
 21  
 22  
 23  
 24  
 25  
 26  
 27  
 28  
 29  
 30  
 31  
 32  
 33  
 34  
 35  
 36  
 37  
 38  
 39  
 40  
 41  
 42  
 43  
 44  
 45  
 46  
 47  
 48  
 49  
 50  
 51  
 52  
 53  
 54  
 55  
 56  
 57  
 58  
 59  
 60  
 61  
 62  
 63  
 64  
 65  
 66  
 67  
 68  
 69  
 70  
 71  
 72  
 73  
 74  
 75  
 76  
 77  
 78  
 79  
 80  
 81  
 82  
 83  
 84  
 85  
 86  
 87  
 88  
 89  
 90  
 91  
 92  
 93  
 94  
 95  
 96  
 97  
 98  
 99  
 100

1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378</
------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	--------

[illegible]

```
<210> 6470
<211> 716
<212> PRT
<213> B.fragilis
```

Ser 1	Asn	Tyr	Gly	Met 5	Asn	Thr	Lys	Ser	Lys 10	His	Pro	Leu	Leu	Ser 15	Phe
Pro	Lys	Pro	Gln	Phe	Thr	Thr	Gly	Met 25	Ile	Arg	Leu	Ser	Ile	Thr	Leu
Leu	Phe	Ser	Thr	Leu	Cys	Ile	Gly	Ser	Phe	Gly	Gln	Lys 45	Lys	Ser	Pro
Ile	Thr	Val	Glu	Thr	Leu	Leu	Glu	Glu	Met	Thr	Ser	Tyr	Asp	Glu	Met
Thr	Arg	Tyr	Pro	Thr	Leu	Pro	Tyr	Arg	Ser	Met	Gln	Gln	Ser	Ser	Tyr
Asp	Arg	Arg	Ser	Val	Ser	Pro	Asp	Arg	Pro	Gly	Trp	Phe	Ala	Asn	Asp
Asp	Gly	Glu	Gly	Phe	Ile	Arg	Leu	Glu	Glu	His	Asn	Gly	Arg	Lys	Glu
Lys	Val	Leu	Phe	Glu	Asp	Glu	Gly	Pro	Gly	Ala	Ile	Thr	Arg	Ile	Trp
Leu	Thr	Thr	Phe	Gly	Ser	Ile	His	Thr	Ile	Leu	Arg	Phe	Tyr	Phe	Asp
Gly	Lys	Asp	Glu	Pro	Gly	Trp	Val	Val	Pro	Ser	Tyr	Asp	Leu	Gln	Lys
Phe	Gly	Val	Arg	Gly	Leu	Lys	Lys	Gly	Leu	Ile	Glu	Pro	Asp	Asp	Lys
Trp	Ile	Arg	Gly	Ser	Leu	Ile	Tyr	Leu	Pro	Val	Thr	Tyr	Ala	Asp	Gly
Cys	Lys	Val	Thr	Met	Glu	Glu	Leu	Thr	Pro	Glu	Arg	Thr	Asn	Arg	His



[illegible]

Glu Ala Thr Gly Ala Ile Asn Leu Gly Met His Lys Pro Ile Asp Gly  
           675                  680                  685  
 Lys Phe Ile Leu Arg Ile Glu Leu Thr Gly Gln Asn Ala Leu Ser Thr  
           690                  695                  700  
 Gly Thr Leu Phe Gly Leu Asp Cys Ile Arg Ile Glu  
       705                  710                  715

<210> 6471  
 <211> 92  
 <212> PRT  
 <213> B.fragilis

<400> 6471  
 His Asp Tyr Gly Phe Cys Lys Ile Ser Gly Arg Ser Leu Asn Asn Arg  
 1                  5                  10                  15  
 Pro Phe Asp Lys Phe Pro Ile Glu Glu Cys Thr Tyr Gly Thr Pro His  
           20                  25                  30  
 Tyr Ile Thr Leu Glu Glu Lys Asp Lys Ile Phe Asn Ala Asp Leu Ser  
           35                  40                  45  
 Ala Thr Pro Gln Leu Ala Ile Gln Arg Asp Ile Phe Ile Phe Gln Thr  
           50                  55                  60  
 Leu Ile Gly Cys Arg Val Ser Asp Leu Tyr Arg Met Thr Gln Ser Arg  
 65                  70                  75                  80  
 Pro Thr His Ala Thr Arg Thr Ser Asp Arg Lys Ala  
                   85                  90

<210> 6472  
 <211> 480  
 <212> PRT  
 <213> B.fragilis

<400> 6472  
 Arg Tyr Ile Met Lys Glu Glu Leu Ser Lys Ala Thr Arg Thr Glu Ser  
 1                  5                  10                  15  
 Asp Leu Ile Gly Glu Arg Glu Val Pro Glu Thr Ala Leu Tyr Gly Val  
           20                  25                  30  
 Gln Thr Leu Arg Gly Ile Glu Asn Phe Arg Ile Ser Lys Tyr His Leu  
           35                  40                  45  
 Cys Glu Tyr Pro Leu Phe Ile Asn Ala Leu Ala Ile Thr Lys Met Gly  
           50                  55                  60  
 Ala Ala Met Ala Asn Phe Glu Leu Gly Leu Leu Thr Glu Glu Gln Ala  
 65                  70                  75                  80  
 Asn Ala Ile Leu Arg Ala Cys Lys Glu Ile Leu Glu Gly Lys His His  
                   85                  90                  95  
 Asp Gln Phe Pro Val Asp Met Ile Gln Gly Gly Ala Gly Thr Thr Thr  
           100                  105                  110  
 Asn Met Asn Ala Asn Glu Val Ile Ala Asn Arg Ala Leu Glu Leu Met  
           115                  120                  125  
 Gly His Lys Arg Gly Glu Tyr Gln Tyr Cys Ser Pro Asn Asp His Val  
           130                  135                  140  
 Asn Arg Ser Gln Ser Thr Asn Asp Ala Tyr Pro Thr Ala Ile His Ile  
 145                  150                  155                  160  
 Gly Met Tyr Tyr Thr His Leu Lys Leu Val Lys His Phe Lys Glu Val  
                   165                  170                  175  
 Ile Asp Ala Phe Arg Arg Lys Gly Glu Glu Phe Ala His Val Ile Lys  
           180                  185                  190  
 Met Gly Arg Thr Gln Leu Glu Asp Ala Val Pro Met Thr Leu Gly Gln  
           195                  200                  205  
 Thr Phe Asn Gly Phe Ala Ser Ile Leu Gln Asp Glu Val Lys Asn Leu

210	215	220
Asp Phe Ala Ala Gln Asp Phe Leu Thr Val Asn Met Gly Ala Thr Ala		
225	230	235
Ile Gly Thr Gly Ile Thr Ala Glu Pro Glu Tyr Ala Ser Lys Cys Ile		240
	245	250
Ala Ala Leu Arg Lys Ile Thr Gly Leu Asp Ile Arg Leu Ala Asp Asp		255
	260	265
Leu Ile Gly Ala Thr Ser Asp Thr Ser Cys Leu Val Gly Tyr Ser Ser		270
	275	280
Ala Met Arg Arg Ile Ala Val Lys Met Asn Lys Ile Cys Asn Asp Leu		285
	290	295
Arg Leu Leu Ala Ser Gly Pro Arg Cys Gly Leu Gly Glu Ile Asn Leu		300
305	310	315
Pro Ala Met Gln Pro Gly Ser Ser Ile Met Pro Gly Lys Val Asn Pro		320
	325	330
Val Ile Pro Glu Val Met Asn Gln Ile Asp Tyr Lys Val Ile Gly Asn		335
	340	345
Asp Leu Cys Val Ala Met Ser Gly Glu Ala Ala Gln Met Glu Leu Asn		350
	355	360
Ala Met Glu Pro Val Met Ala Gln Cys Cys Phe Glu Ser Ala Asp Leu		365
	370	375
Leu Met Asn Gly Phe Asp Thr Leu Arg Thr Leu Cys Ile Asp Gly Ile		380
385	390	395
Thr Ala Asn Glu Glu Lys Cys Arg Lys Asp Val His Asn Ser Ile Gly		400
	405	410
Val Val Thr Ala Leu Asn Pro Val Ile Gly Tyr Lys Asn Ser Thr Lys		415
	420	425
Ile Ala Lys Glu Ala Gln Glu Thr Gly Lys Gly Val Tyr Glu Leu Val		430
	435	440
Leu Glu His Asp Ile Leu Ser Lys Glu Asp Leu Asp Thr Ile Leu Lys		445
	450	455
Pro Glu Asn Met Ile His Pro Val Lys Leu Asp Ile Lys Pro Asn His		460
465	470	475
		480

&lt;210&gt; 6473

&lt;211&gt; 355

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6473

Gly Ile Ile Ile Leu Leu Phe Phe Ala Val Arg Lys Lys Ser Ile Met	
1	5
Asp Ser Phe Asp Lys Tyr Ile Ser Arg Asn Leu Pro Leu Val Ser Leu	
	10
	15
	20
Ile Ser Ala Val Phe Ile Ile Tyr Pro Asn Ile Ala Cys Thr Pro Trp	
	25
	30
	35
	40
Glu Leu Asn Ser Leu Glu Pro Ser Glu Tyr Leu Gly Phe Phe Ser Tyr	
	45
	50
	55
	60
Phe Ile Tyr Arg Phe Leu Phe Phe Trp Gly Met Ile Gly Phe Leu Ile	
65	70
	75
	80
Asn Tyr Asn Leu Arg Gln Ile Pro Thr Ala Leu Phe Arg Lys Arg Leu	
	85
	90
	95
Thr His Asn Phe Leu Phe Ala Leu Thr Gly Tyr Leu Phe Phe Ala Ser	
	100
	105
	110
Val Ser Tyr Thr Ile Ser Ser His Gly Phe His Thr Asp Phe Leu Gly	
	115
	120
	125
Ser Thr Leu Ile Ser Gln Phe Phe Thr Leu Cys Phe Leu Cys Thr Leu	
	130
	135
	140
Val Gly Tyr Ile Ser Met Leu Tyr Thr Arg Gln Arg Glu Lys Glu Gln	

145 150 155 160  
 Glu Ile Glu Arg Leu Arg Phe Glu Asn Leu Gln Ser Arg Cys Asp Ala  
 165 170 175  
 Leu Ala Asn Gln Val Asn Pro His Phe Phe Phe Asn Ser Leu Asn Gly  
 180 185 190  
 Ile Ser Ser Leu Ile Arg Lys Lys Asn Asp Glu Asn Thr Leu Thr Tyr  
 195 200 205  
 Val Asn Gln Leu Ser Asp Ile Phe Arg Tyr Ile Leu Gln Ser Asp Arg  
 210 215 220  
 Lys Gly Val Val Thr Leu Arg Glu Glu Leu Glu Phe Ile Gln Ser Phe  
 225 230 235 240  
 Arg Tyr Val Met Glu Val Arg Phe Ala Asn Lys Leu Ser Phe Thr Ile  
 245 250 255  
 Asp Val Asp Glu Ala Gln Lys Asp Val Leu Thr Leu Pro Val Leu Ser  
 260 265 270  
 Leu Leu Pro Leu Val Asp Asn Val Thr Val His Asn Arg Ile Asp Ser  
 275 280 285  
 Glu His Lys Met Asp Ile Ser Ile Arg Leu Asn Glu Gln Tyr Glu Leu  
 290 295 300  
 Val Val Ser Asn Pro Ile Tyr Pro Lys Leu Ser Pro Pro Asp Thr Asn  
 305 310 315 320  
 Gly Thr Gly Leu Ser Asn Leu Glu Asn Arg Phe Asn Leu Leu Met Asn  
 325 330 335  
 Lys Gln Ile Arg Ile Glu Thr Asp Glu Lys Val Phe Arg Val Tyr Leu  
 340 345 350  
 Pro Leu Ile  
 355

&lt;210&gt; 6474

&lt;211&gt; 301

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6474

Val Thr Pro Met Lys Glu Arg Ile Leu Asn Ile Glu Thr Val His Gln  
 1 5 10 15  
 Cys Asn Cys Cys Leu Gly Cys Lys Thr Leu His Pro Leu Val Ser Val  
 20 25 30  
 Ile Asp Leu Ser Lys Ser Asp Leu Glu Gln Gln Ile Ile Lys Phe Asp  
 35 40 45  
 Phe Tyr Thr Ile Leu Met Met Glu Gly Glu Ile Asp Asp Ile Leu Tyr  
 50 55 60  
 Gly Arg Lys Tyr Tyr Asp Tyr Ser Asn Ala Ser Leu Val Phe Leu Thr  
 65 70 75 80  
 Pro Gly Glu Ser Ile Lys Ile Asn Lys Ser Lys Ala Leu Pro Ser Lys  
 85 90 95  
 Gly Trp Leu Leu Ala Phe His Pro Asp Leu Ile Ser Gln Thr Ser Leu  
 100 105 110  
 Gly Glu His Ile Lys Asp Tyr Ser Phe Phe Phe Tyr Asn Pro Glu Glu  
 115 120 125  
 Ala Leu His Leu Ser Gln Arg Glu Lys Ala Lys Ala Val Glu Cys Ile  
 130 135 140  
 Cys Asn Ile Glu Glu Glu Leu Arg His Ala Ile Asp Cys His Ser Gln  
 145 150 155 160  
 Ile Leu Ile Ser Arg Tyr Ile Glu Leu Leu Asp His Cys Asn Arg  
 165 170 175  
 Phe Tyr Glu Arg Gln Phe Ile Thr Arg Cys Glu Ala Asn Lys Lys Ile  
 180 185 190  
 Met Lys Lys Thr Asp Val Leu Leu Lys Asp Tyr Ile Leu Ser Gly Lys

195	200	205
Leu Lys Tyr Asn Thr Ser Pro Ser Leu Gly Tyr Cys Ala Lys Ile Leu		
210	215	220
Gln Leu Ser Ser His Tyr Phe Asn Asp Leu Leu Lys Phe Glu Ser Gly		
225	230	235
Lys Asn Ile Asp Glu Tyr Phe Glu Ser Lys Arg Leu Glu Met Ala Lys		
245	250	255
Ser Met Leu Leu Asp Ser Asn Asn Thr Val Ser Val Val Thr Glu Lys		
260	265	270
Leu Gly Tyr Pro Asn Ile Arg Tyr Phe Ser Arg Leu Phe Lys Arg Ile		
275	280	285
Thr Gly Val Ala Pro Asn Asn Tyr Arg Leu Ser Gln Asn		
290	295	300

&lt;210&gt; 6475

&lt;211&gt; 587

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6475

Lys Met Tyr Ile Glu Lys Ile Asn Ser Pro Lys Asp Ile Lys Glu Leu		
1	5	10
Ser Val Glu Gln Leu Ser Val Leu Ala Glu Glu Val Arg Thr Ala Leu		
20	25	30
Ile Arg Lys Leu Ser Glu His Gly Gly His Ile Gly Pro Asn Leu Gly		
35	40	45
Met Val Glu Thr Thr Ile Ala Leu His Tyr Val Phe Asn Ser Pro Ile		
50	55	60
Asp Lys Ile Val Phe Asp Val Ser His Gln Ser Tyr Val His Lys Met		
65	70	75
Leu Thr Gly Arg Met Ala Ala Phe Leu Asp Pro Ala Lys Tyr Asp Asp		
85	90	95
Val Thr Gly Tyr Thr Asn Pro Asp Glu Ser Glu His Asp Phe Phe Thr		
100	105	110
Ile Gly His Thr Ser Thr Ser Val Ser Leu Ala Met Gly Leu Ala Lys		
115	120	125
Gly Arg Asp Leu Thr Gly Gly Lys Glu Asn Ile Ile Ala Val Ile Gly		
130	135	140
Asp Gly Ser Leu Ser Gly Gly Glu Ala Leu Glu Gly Leu Asn Asn Ala		
145	150	155
Ala Met Leu Gly Ser Asn Met Ile Ile Ile Val Asn Asp Asn Asp Gln		
165	170	175
Ser Ile Ala Glu Asn His Gly Gly Leu Tyr Lys Gly Leu Lys Glu Leu		
180	185	190
Arg Asp Thr Asn Gly Glu Ser Pro Asp Asn Ile Phe Lys Ala Met Gly		
195	200	205
Leu Glu Tyr Tyr Tyr Leu Gly Asp Gly His Asp Val Ser Ala Leu Ile		
210	215	220
Lys Leu Phe Thr Pro Val Lys Asp Ile Asp Arg Ala Val Val Leu His		
225	230	235
Ile His Thr Ile Lys Gly Lys Gly Leu Lys Tyr Ala Glu Glu Asn Lys		
245	250	255
Glu Tyr Trp His Ala Gly Gly Pro Phe His Ile Glu Asp Gly Ser Pro		
260	265	270
Lys Gly Pro Gly Trp Pro Val Asn Glu Thr Val Arg Glu Ser Val Leu		
275	280	285
Asp Leu Ile Glu Lys Arg Ser Asp Val Val Ala Ile Thr Ala Gly Thr		
290	295	300
Pro Ser Val Ile Gly Phe Thr Glu Asp Tyr Arg Lys Arg Ala Gly Lys		

305 310 315 320  
 Gln Phe Val Asp Val Gly Ile Ala Glu Glu His Ala Val Ala Met Ala  
 325 330 335  
 Ser Gly Ile Ala Arg Asn Gly Gly Thr Pro Ile Phe Gly Val Phe Ser  
 340 345 350  
 Pro Phe Leu Gln Arg Thr Tyr Asp Gln Leu Ser Ser Asp Leu Cys Leu  
 355 360 365  
 Asn Asn Asn Pro Ala Val Ile Met Val Phe Met Ala Ser Val Tyr Gly  
 370 375 380  
 Met Asn Ser Asn Thr His Leu Gly Ile Tyr Asp Ile Pro Met Ile Ser  
 385 390 395 400  
 His Ile Pro Asn Leu Val Tyr Leu Ala Pro Thr Ser Lys Glu Glu Tyr  
 405 410 415  
 Leu Ala Met Phe Lys Tyr Ala Thr Thr Gln Lys Ala His Pro Ile Ala  
 420 425 430  
 Ile Arg Ile Pro Met Met Met Pro Glu Thr Gly Ile Glu Asp Thr Thr  
 435 440 445  
 Asp Tyr Ser Leu Leu Asn Lys Tyr Gln Val Val Arg Lys Gly Ser Gly  
 450 455 460  
 Val Ala Ile Ile Ala Leu Gly Asp Phe Phe Glu Leu Gly Val Gln Ile  
 465 470 475 480  
 Ala Asp Lys Tyr Lys Ile Leu Thr Gly Asn Asp Val Thr Leu Ile Asn  
 485 490 495  
 Pro Lys Phe Ile Thr Gly Ile Asp Glu Leu Leu Glu Cys Leu Lys  
 500 505 510  
 Thr Asp His Glu Leu Val Leu Thr Leu Glu Asp Gly Ile Val Glu Gly  
 515 520 525  
 Gly Phe Gly Gln Thr Ile Ala Ser Phe Tyr Gly Leu Ser Asp Met Lys  
 530 535 540  
 Val Lys Asn Tyr Gly Ile Lys Lys Ser Phe Pro Thr Asp Phe Arg Pro  
 545 550 555 560  
 Glu Glu Leu Met Arg Glu Asn Gly Leu Ser Val Glu Gln Ile Val Glu  
 565 570 575  
 Asp Ile Lys Ser Val Cys Arg Glu His Val Met  
 580 585

&lt;210&gt; 6476

&lt;211&gt; 221

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6476

Asn Tyr Ile Phe Val Pro Asn Phe Lys His Asn Leu Val Met Lys Lys  
 1 5 10 15  
 Ile Ile Ser Ala Leu Met Met Ala Val Cys Ile Gly Met Ala Met Pro  
 20 25 30  
 Ala Gln Ala Gln Leu Ile Lys Phe Gly Val Lys Gly Gly Val Asn Leu  
 35 40 45  
 Ala Lys Ala Asp Leu Asn Thr Ser Asp Phe Lys Thr Asp Asn Phe Thr  
 50 55 60  
 Gly Phe Phe Ile Gly Pro Met Ala Glu Val Thr Ile Pro Leu Ile Gly  
 65 70 75 80  
 Leu Gly Val Asp Ala Ser Leu Leu Phe Ser Gln Arg Gly Val Lys Val  
 85 90 95  
 Ser Ser Arg Asp Phe Ile Asp Pro Leu Ala Asp Ser Asp Pro Ile Ile  
 100 105 110  
 Gly Asn Arg Thr Ile Arg Gln Asn Gly Leu Asp Ile Pro Ile Asn Leu  
 115 120 125  
 Lys Tyr Thr Ile Gly Leu Gly Ser Ser Leu Gly Ile Tyr Val Ala Ala

130		135		140
Gly Pro Asp Phe Tyr Phe Asn Phe Ser Gly Asp Lys Val Tyr Glu Asn				
145		150		155
Tyr Gly Arg Leu Asn Lys Lys Asn Ala Gln Ile Gly Ile Asn Val Gly				160
	165		170	
Ala Gly Val Lys Leu Leu Arg His Leu Gln Val Gly Ala Asn Tyr Asn				175
	180		185	
Ile Pro Leu Asn Lys Thr Ala Glu Trp Lys Glu Ala Asp Phe Ser Tyr				190
	195		200	
Lys Thr Lys Met Trp Gln Ile Ser Ala Ala Tyr Ile Phe				205
	210		215	
				220

<210> 6477  
 <211> 401  
 <212> PRT  
 <213> B.fragilis

<400> 6477

Lys Asn Val Met Phe Gln His Gln Phe Ile Asp Ser Leu Thr Gly Leu				
1	5		10	15
Leu Cys Phe Phe Gly Asn Leu Gly Arg Val Phe Ile Ser Asp Asn Arg				
	20		25	30
Ile Gln Cys Ser His His Thr Asp Thr Val Val Asn Ile Phe Pro Ala				
	35		40	45
Phe Phe Leu Ile Gly Arg Asp Ala Val Tyr Thr Gln Gly Thr Gln Arg				
	50		55	60
Ile Glu Thr Ile His Gln Gln Ile Gly Arg Phe Glu Thr Ala Leu Gly				
	65		70	75
His Asp Arg Phe His Arg Ile Gln Phe His Leu Gly Arg Phe Thr Thr				
	85		90	95
His Ser Tyr Thr Lys Val Val Thr Tyr Tyr Phe Ile Val Asn Leu Ile				
	100		105	110
His His Phe Gly Asn Asn Arg Ile Asp Leu Thr Arg His Asn Gly Arg				
	115		120	125
Thr Gly Leu His Gly Arg Gln Ile Asp Phe Ala Gln Pro Ala Thr Arg				
	130		135	140
Ala Gly Cys Gln Lys Ala Gln Val Ile Thr Tyr Leu Ile His Phe Tyr				
	145		150	155
Ser Tyr Thr Ala His Ser Arg Arg Val Thr Tyr Gln Thr Arg Ser Val				
	165		170	175
Gly Ser Ser Ser Tyr Gln Ile Ile Gly Gln Thr Asp Ile Gln Ser Gly				
	180		185	190
Asn Leu Pro Glu Ser Arg Tyr Ala Phe Ala Cys Ile Phe Arg Leu Gly				
	195		200	205
Gly Asp Ser Gly Ser Asp Gly Ser Ser Ser His Ile Asp Gly Gln Glu				
	210		215	220
Val Leu Ser Ser Lys Val Gln Val Leu Asp Phe Ile Leu Lys Asp Thr				
	225		230	235
Gly Lys Thr Ile Glu Arg Leu Ser Glu Arg His Arg His Arg Ile Phe				
	245		250	255
Gln Leu Gly Ala Pro His Leu Asp His Val Cys Lys Phe Phe Ala Leu				
	260		265	270
Ser Ser Glu Ser Ile Asp His Leu Leu Lys Met Phe His Gln Phe Glu				
	275		280	285
Val Arg Ile Ile His Thr Asp Met Asp Ser Gly Arg Ile Ser Val Ile				
	290		295	300
Gly Arg Leu Arg Thr Val Asn Met Ile Ile Gly Arg Thr Ile Leu Ile				
	305		310	315
Phe Pro Thr Phe Met Ser His Gln Leu Glu Cys Ala Val Gly Tyr His				

325 330 335  
 Leu Val Gly Ile His Val Gly Gly Ser Ser Gly Ser Thr Leu Asp His  
 340 345 350  
 Val Tyr Arg Glu Leu Val Met Met Phe Pro Phe Gln Asn Phe Phe Thr  
 355 360 365  
 Cys Thr Lys Asn Gly Ile Cys Leu Leu Phe Gly Gln Gln Ser Lys Phe  
 370 375 380  
 Lys Val Ser His Ser Gly Ser His Leu Gly Asn Gly Gln Cys Ile Asp  
 385 390 395 400  
 Lys

<210> 6478  
 <211> 806  
 <212> PRT  
 <213> B.fragilis

<400> 6478

Phe Thr Tyr Ile Thr Phe Phe Leu Leu Thr Leu Lys Asn Arg Gly Met  
 1 5 10 15  
 Arg Lys Trp Thr Tyr Leu Val Ala Ala Leu Leu Val Gly Gly Ala Thr  
 20 25 30  
 Thr Thr Phe Thr Gly Cys Ile Asp Asn Asp Glu Pro Ala Gly Ile Glu  
 35 40 45  
 Gln Leu Arg Gly Ala Lys Ala Glu Phe Ile Lys Ala Lys Ala Ala Tyr  
 50 55 60  
 Glu Asp Ala Leu Thr Gln Ile Gln Leu Val Lys Val Glu Arg Glu Lys  
 65 70 75 80  
 Val Lys Leu Glu Lys Asp Gln Val Asn Leu Glu Leu Lys Lys Cys Ser  
 85 90 95  
 Leu Glu Val Glu Gln Ala Lys Thr Ala Glu Gln Lys Ala Phe Trp Glu  
 100 105 110  
 Ala Glu Ala Gln Lys Arg Thr Glu Glu Phe Lys Ala Lys Ile Leu Asp  
 115 120 125  
 Leu Gln Thr Leu Thr Ala Gln Ala Glu Tyr Asn Asn Lys Lys Ala Leu  
 130 135 140  
 Met Asp Ile Glu Val Ala Leu Leu Thr Met Lys Asp Asp Ala Tyr Thr  
 145 150 155 160  
 Ala Glu Ile Asn Lys Tyr Arg Ala Ala Leu Val Gly Tyr Thr Phe Lys  
 165 170 175  
 Ser Glu Ser Thr Thr Asn Gly Glu Thr Thr Ile Thr Thr Asn Ser Ser  
 180 185 190  
 Tyr Gly Ala Leu Ala Asp Leu Ala Glu Ala Lys Ser Ser Leu Met Lys  
 195 200 205  
 Ala Glu Val Ala Arg Ile Asn Phe Leu Ser Lys Asn Lys Tyr Tyr Pro  
 210 215 220  
 Glu Glu Leu Gln Leu Glu Arg Thr His Ala Ala Lys Thr Leu Glu Ile  
 225 230 235 240  
 Gln Met Ala Leu Met Glu Glu Tyr Lys Ala Leu Asp Ala Thr Gly Thr  
 245 250 255  
 Asp Ser Lys Ala Leu Ala Asp Lys Leu Lys Gly Tyr Lys Thr Asp Leu  
 260 265 270  
 Gln Ala Leu Asp Ala Lys Glu Asp Glu Ala Tyr Thr Lys Ile Glu Glu  
 275 280 285  
 Met Arg Lys Pro Ile Phe Pro Ile Asn Gln Gln Ile Ile Glu Glu Lys  
 290 295 300  
 Ile Lys Leu Asp Ala Thr Ser Ser Ala Tyr Thr Leu Ala Lys Ala Asp  
 305 310 315 320  
 Val Asp Pro Ala Leu Val Asn Gly Leu Tyr Ser Ala Leu Ser Thr Gly



325 330 335  
 Glu Asp Glu Glu Lys Leu Val Glu Asp Leu Asp Lys Ile Phe Val Gln  
 340 345 350  
 Asp Ser Trp Asn Ala Glu Leu Leu Asn Tyr Gln Tyr Thr Met Lys Lys  
 355 360 365  
 Asp Val Val Ile Asn Asp Leu Ser Leu Asn Asn Lys Ala Thr Lys Ile  
 370 375 380  
 Gly Ala Ile Ala Asp Ala Ile Lys Ala Tyr Tyr Gln Gly Glu Asn Ser  
 385 390 395 400  
 Glu Ala Phe Asp Ala Ser Gly Lys Leu Leu Asp Ala Tyr Lys Thr Lys  
 405 410 415  
 Phe Glu Asn Glu Leu Lys Arg Leu Glu Ile Asp Lys Lys Pro Ala Tyr  
 420 425 430  
 Asp Gln Phe Lys Ser Asp Ser Thr Ala Trp Ile Asn Ala Tyr Val Ala  
 435 440 445  
 Tyr Val Ala Ala Leu Lys Ala Tyr Asn Asn Tyr Lys Gly Thr Asn Thr  
 450 455 460  
 Tyr Gln Ala Ile Thr Lys Glu Val Thr Thr Tyr Asn Ser Leu Lys Ala  
 465 470 475 480  
 Glu Asp Lys Lys Leu Glu Thr Ala Asn Ala Leu Arg Thr Ser Ile Leu  
 485 490 495  
 Gly Tyr Leu Gly Lys Arg Lys Ala Val Asp Gly Phe Asn Ala Glu Phe  
 500 505 510  
 Ala Thr Thr Tyr Lys Asp Ala Leu Thr Asp Ala Asn Leu Ala Thr Phe  
 515 520 525  
 Asn Glu Ala Ile Ala Thr Ala Val Ser Asp Gly Ile Ser Ser Leu Ile  
 530 535 540  
 Gly Asn Glu Thr Leu Ala Thr Ser Phe Asn Asp Lys Val Glu Gly Ser  
 545 550 555 560  
 Thr Leu Phe Ala Phe Leu Glu Ala Asn Gln Ala Leu Phe Gly Gly Ser  
 565 570 575  
 Glu Leu Asn Leu Glu Lys Ser Ile Glu Pro Lys Glu Ile Ser Ala Asn  
 580 585 590  
 Lys Tyr Asp Met Pro Lys Asn Val Ser Gln Leu Ile Asp Asn Pro Glu  
 595 600 605  
 Asn Asn Ser Gly Ser Phe Val Lys Tyr Thr Tyr Leu Ala Gln Glu Ser  
 610 615 620  
 Asn Tyr Leu Val Asn Leu Asp Lys Trp Gln Ala Leu Tyr Ala Lys Ile  
 625 630 635 640  
 Lys Ala Glu Ala Asp Pro Val Leu Ala Glu Val Asp Ala Ile Asn Glu  
 645 650 655  
 Lys Ile Ala Thr Leu Glu Ser Gln Ile Lys Asp Glu Asn Ala Ala Leu  
 660 665 670  
 Trp Gln Ala Glu Leu Ala Cys Tyr Leu Ile Lys Gly Asp Lys Ser Lys  
 675 680 685  
 Arg Gln Asn Glu Ile Phe Ser Glu Ser Asn Pro Tyr Lys Asn Tyr Tyr  
 690 695 700  
 Thr Ser Asn Glu Gln Glu Pro Leu Leu Gly Asn Val Val Thr Glu Tyr  
 705 710 715 720  
 Ser Lys Leu Glu Ala Glu Ile Ala Leu Val Gln Arg Ala Met Glu Asp  
 725 730 735  
 Gly Tyr Phe Tyr Tyr Thr Tyr Tyr Asp Ala Asn Ser His Thr Tyr Lys  
 740 745 750  
 Val Ser Glu Lys Ser Leu Asn Leu Thr Ser Leu Leu Glu Thr Gln Glu  
 755 760 765  
 Glu Ala Ile Thr Asp Ala Lys Lys Thr Val Glu Asp Ile Asp Asn Lys  
 770 775 780  
 Ile Ala Leu Phe Asp Lys Tyr Gly Tyr Thr Asn Ile Glu Gly Gln Glu  
 785 790 795 800

Glu Tyr Leu Asp Leu Ser  
805

<210> 6479  
<211> 523  
<212> PRT  
<213> B.fragilis

<400> 6479

Lys	Thr	Arg	Ile	Met	Asn	Val	Ile	Ile	Tyr	Cys	Arg	Val	Ser	Ser	Asp
1				5					10				15		
Glu	Gln	Thr	Leu	Gly	Ala	Ser	Leu	Asp	Val	Gln	Glu	Glu	Arg	Leu	Arg
			20					25					30		
Lys	Tyr	Cys	Asn	Gln	Met	Gly	Tyr	Asn	Ile	Ile	Asn	Asn	Ile	Pro	Tyr
		35					40					45			
Arg	Glu	Asp	Glu	Ser	Ala	Lys	Thr	Phe	Glu	Lys	Arg	Pro	Val	Ile	Gln
	50					55					60				
Gly	Ile	Met	Ser	Tyr	Ile	Arg	Lys	Asn	Lys	Gly	Lys	Val	Asn	Lys	Leu
65					70					75					80
Leu	Phe	Leu	Arg	Trp	Asp	Arg	Tyr	Ser	Arg	Asp	Ile	Ile	Ser	Ala	Ser
				85					90					95	
Glu	Asn	Leu	Lys	Glu	Leu	Leu	Lys	Leu	Gly	Val	Glu	Pro	Asn	Ala	Ile
			100					105					110		
Glu	Ala	Pro	Leu	Asp	Phe	Asn	Ser	Asp	Thr	Trp	Pro	Leu	Leu	Leu	Gly
		115					120					125			
Val	His	Ile	Gly	Ser	Ala	Gln	Cys	Asp	Asn	Ile	Lys	Arg	Ser	Lys	Ala
	130					135					140				
Thr	Met	Asp	Gly	Ile	His	Gly	Thr	Leu	Ala	Lys	Gly	Lys	Cys	Ala	Asn
145					150					155					160
Lys	Ala	Pro	Arg	Gly	Tyr	Lys	Asn	Val	Arg	Ile	Ser	Lys	His	Glu	Thr
				165					170					175	
His	Val	Glu	Ile	Asp	Thr	Asn	Thr	Ala	Pro	Phe	Ile	Gln	Ala	Met	Phe
		180					185					190			
Lys	Glu	Val	Ala	Lys	Gly	Ile	Glu	Thr	Pro	Cys	Tyr	Ile	Arg	Arg	Lys
	195						200					205			
Phe	Ala	Arg	Lys	Gly	Tyr	Asn	Ile	Pro	Glu	Ser	Ser	Phe	Leu	Glu	Met
210						215					220				
Leu	Arg	Asn	Lys	Phe	Tyr	Ile	Gly	Lys	Ile	Arg	Val	Pro	Ala	Tyr	Lys
225					230					235					240
Gly	Glu	Pro	Glu	Tyr	Val	Asn	Gly	Glu	His	Glu	Ala	Ile	Ile	Asp	
			245					250					255		
Glu	Glu	Thr	Phe	Tyr	Lys	Val	Gln	Glu	Ile	Leu	Asp	Gly	Lys	Arg	Lys
		260					265						270		
Lys	Thr	Pro	Lys	Leu	Ser	Lys	Ala	Ile	Asn	Pro	Asp	Leu	Tyr	Leu	Arg
	275						280					285			
Lys	Phe	Leu	Ile	Cys	Pro	Val	Cys	Gly	Cys	Ala	Leu	Thr	Gly	Ala	Thr
	290					295					300				
Ser	Ser	Gly	Asn	Gly	Gly	Lys	Tyr	Thr	Tyr	Tyr	Phe	Cys	Cys	Asn	Asn
305					310					315					320
Gln	Lys	His	Ile	Arg	Met	Arg	Ala	Glu	Asn	Val	Asn	Glu	Glu	Phe	Ala
			325						330					335	
Arg	Tyr	Thr	Ala	Gln	Leu	Lys	Pro	Asn	Lys	Thr	Val	Leu	Asn	Leu	Tyr
		340						345					350		
Asn	Glu	Ile	Leu	Lys	Asp	Leu	Gln	Asn	Glu	Arg	Lys	Gly	Glu	Ser	Lys
	355					360						365			
Lys	Glu	Val	Val	Ala	Leu	Gln	Asn	Glu	Leu	Ser	Thr	Val	Gln	Lys	Arg
	370					375					380				
Ile	Asn	Ser	Ile	Glu	Asp	Lys	Tyr	Leu	Asp	Gly	Asp	Leu	Thr	Lys	Glu
385					390					395					400

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400

Glu Tyr Asn Arg Met Leu Glu Arg Tyr Thr Lys Glu Ala Ser Thr Ile  
 405 410 415  
 Gln Gln Gln Val Glu Met Arg Glu Asn Pro Asn Arg Ser Asn Ile Glu  
 420 425 430  
 Pro Lys Leu Asn Tyr Ser Ile Asn Leu Ile Asn Asn Ile Asp Ser Tyr  
 435 440 445  
 Ile Arg Asn Ala Ser Val Gly Val Lys Ile Lys Leu Ile Ser Ser Met  
 450 455 460  
 Phe Pro Glu Lys Ile Glu Phe Asp Gly Lys Thr Tyr Arg Thr Asn Ser  
 465 470 475 480  
 Tyr Asn Lys Val Leu Asp Leu Ile Tyr Gln Gln Thr Asn Glu Leu Arg  
 485 490 495  
 Gly Val Glu Lys Lys Ser Gly Glu Ser Phe Ser Thr Phe Ser Ala Ser  
 500 505 510  
 Val Pro Arg Pro Gly Val Glu Pro Gly Trp Lys  
 515 520

<210> 6480

<211> 339

<212> PRT

<213> B.fragilis

<400> 6480

Lys Asn Asn Phe Asn Phe Leu Met Lys Ser Gln Tyr Glu Lys Lys Arg  
 1 5 10 15  
 Leu Ile Thr Phe Asp Arg Ile Lys Ile Lys Ser Asn Tyr Lys Tyr Leu  
 20 25 30  
 Leu Asn Thr Lys Val Lys Phe Asn Glu Met Phe His Ser Arg Ser Gly  
 35 40 45  
 Glu Lys Ile Gly Ile Phe Tyr Ser Ser Lys Asp Asp Ile Asn Ile Pro  
 50 55 60  
 Tyr Asn Leu Tyr Ile Ala Val Ser Tyr Ile Lys Gln Thr Leu Thr Leu  
 65 70 75 80  
 Glu Phe Ser Ser Lys Ile Leu Lys Glu Lys Tyr Pro Asp Leu Ile Ser  
 85 90 95  
 Arg Asp Thr Ile Lys Glu Cys Leu Thr Asn Ile Asn Gln Leu His Ile  
 100 105 110  
 Cys Asp Ile Asp Val Asp Ser Ile Leu Ser Asn Gly Ala Ile Thr Ser  
 115 120 125  
 Val Asp Val Thr Tyr Asp Ala Asn Leu Ile Leu Ser Asp Asn Leu Leu  
 130 135 140  
 Asn Ile Leu Asn Ser Gln Val Thr Asn Tyr Arg Arg Phe Lys Trp Ala  
 145 150 155 160  
 His Tyr Asp Lys Glu Gly Ile Thr Phe Thr Lys Asp Val Lys Ser Lys  
 165 170 175  
 Asp Cys Thr Glu Thr Ile Thr Leu Tyr Asn Lys Glu Lys Glu Ile Cys  
 180 185 190  
 Thr Ser His Asn Lys Asp Phe Leu Asn Ser Leu Ser Gln Pro Gln Ser  
 195 200 205  
 Val Ile Asp Tyr Phe Lys Gly Lys Thr Arg Phe Glu Ile Thr Leu Asn  
 210 215 220  
 Thr Val Lys Lys Ile Met Asn Tyr Leu Asn Leu Thr Asp Thr Lys Ile  
 225 230 235 240  
 Phe Ser Val Leu Asn Ser Asp Thr Asn Pro Ile Leu Thr Gln Phe Asp  
 245 250 255  
 Lys Val Phe Gly Asn Ser Thr Ala Asn Met Pro Asn Thr Thr Phe Asp  
 260 265 270  
 Asp Tyr Glu Asn Trp Ala Met Lys Ile Ile Leu Glu Arg Tyr Asn Gly  
 275 280 285

Asp Leu Lys Leu Leu Glu Gln Asp Ile Arg Ser Lys Phe Asn Ser Arg  
 290 295 300  
 Ser Gly Ala Ser Lys Arg Met Lys Lys Phe Glu Thr Val Tyr His Ala  
 305 310 315 320  
 Met Thr Ser Ala Ser Thr Ser Glu Asn Pro Ile Glu Lys Ile Arg Asn  
 325 330 335  
 Leu Leu Leu

<210> 6481  
 <211> 87  
 <212> PRT  
 <213> B.fragilis

<400> 6481  
 Met Met Ser Val Leu Leu Leu Pro Leu Arg Trp Arg Leu Leu Ser Ala  
 1 5 10 15  
 Lys Ser Met Pro Pro Thr Lys Phe Phe His Leu Tyr Ile Leu Leu Leu  
 20 25 30  
 Phe Arg Glu Gly Val Val Ala Leu Arg Phe Ala Thr Phe Ala Val Pro  
 35 40 45  
 Phe Ala Gly Gly Pro Asn Ala Gly Phe Leu His Tyr Pro Lys Ala Val  
 50 55 60  
 Gln Ser Gln Pro Ile Tyr Trp Pro Ile Ser Thr Val Tyr Arg Ile Ile  
 65 70 75 80  
 Tyr Leu Ser Cys Pro Val Lys  
 85

<210> 6482  
 <211> 206  
 <212> PRT  
 <213> B.fragilis

<400> 6482  
 Glu Arg Ser Leu Val Phe Ala Arg Ile Leu Ile Thr Phe Val Arg Asn  
 1 5 10 15  
 His Tyr Gln Leu Ser Asn Gly Lys Lys Asp Glu Val Trp Gln Val Val  
 20 25 30  
 Ser Ser Lys Tyr Leu Phe Arg Arg Pro Trp Leu Thr Val Arg Cys Asp  
 35 40 45  
 Asp Met Leu Leu Pro Asn Gly Asn His Ile Pro Glu Tyr Tyr Ile Leu  
 50 55 60  
 Glu Tyr Pro Asp Trp Val Asn Thr Ile Ala Ile Thr Lys Glu Gly Lys  
 65 70 75 80  
 Phe Val Phe Val Arg Gln Phe Arg Pro Gly Ile Gly Lys Gln Leu Tyr  
 85 90 95  
 Glu Leu Cys Ala Gly Val Cys Glu Lys Glu Asp Ala Ser Pro Leu Val  
 100 105 110  
 Ser Ala Gln Arg Glu Leu Leu Glu Glu Thr Gly Tyr Gly Lys Gly Asn  
 115 120 125  
 Trp Lys Glu Tyr Met Val Ile Ser Ala Asn Pro Ser Thr His Thr Asn  
 130 135 140  
 Leu Thr His Cys Phe Leu Ala Thr Asp Val Glu Gln Ile Asp Thr Gln  
 145 150 155 160  
 His Leu Glu Asp Thr Glu Ala Leu Thr Val His Leu Leu Ser Leu Glu  
 165 170 175  
 Glu Val Lys Glu Leu Leu Glu Asn Gly Gln Ile Met Gln Ser Leu His  
 180 185 190  
 Ala Ala Pro Leu Trp Lys Tyr Met Ala Glu His Lys Gln Ile

195

200

205

<210> 6483  
 <211> 63  
 <212> PRT  
 <213> B.fragilis

<400> 6483  
 Arg Val Ile Ser Ser Tyr Glu Val Ile Ser Ser Lys Arg Val Ser Thr  
 1 5 10 15  
 Val Ile Gly Asp Phe Phe Cys Pro Asn Glu Pro Met His Arg Val Glu  
 20 25 30  
 Lys Ser Lys Val Met Leu Asn Leu Ile Ile Pro Val Val Asn Trp Gly  
 35 40 45  
 Phe Gly Asn Asp Ser Lys Gly Cys Phe Asp Phe Val Phe Met Pro  
 50 55 60

<210> 6484  
 <211> 197  
 <212> PRT  
 <213> B.fragilis

<400> 6484  
 Ile Met Glu Leu Gln Val Ile Gln Asn Lys Ile Tyr Glu Val Arg Gly  
 1 5 10 15  
 Gln Lys Val Met Leu Asp Phe Asp Leu Ala Glu Leu Tyr Gly Ser Glu  
 20 25 30  
 Thr Lys Arg Leu Lys Glu Ala Val Arg Arg Asn Leu Lys Arg Phe Pro  
 35 40 45  
 Ser Asp Phe Met Phe Glu Leu Thr Lys Glu Glu Phe Glu Ser Leu Arg  
 50 55 60  
 Ser Gln Ile Ala Ser Ser Asn Lys Arg Gly Gly Thr Arg Tyr Met Pro  
 65 70 75 80  
 Phe Ala Phe Thr Glu Gln Gly Val Ala Met Leu Ser Ser Val Leu Asn  
 85 90 95  
 Ser Glu Ser Ala Ile Glu Ile Asn Ile Ser Ile Met Arg Ala Phe Val  
 100 105 110  
 Thr Val Arg Gln Tyr Leu Ser Ser Leu Asn Ser Thr Thr Lys Glu Ile  
 115 120 125  
 Glu Glu Leu Lys Gln Arg Met Lys Met Leu Glu Glu Gly Asn Glu Asp  
 130 135 140  
 Ile Ile Ala Ala Val Asn Asp Leu Ser Glu Asp Thr Arg Lys Glu Leu  
 145 150 155 160  
 Asp Asp Ile Tyr Leu Ala Leu Ser Gln Leu Ala Glu Lys Gln Lys His  
 165 170 175  
 Val Asn Lys Gln Thr Glu Arg Arg Pro Ile Gly Phe Ala His Tyr Lys  
 180 185 190  
 Glu Asn Asn Lys Lys  
 195

<210> 6485  
 <211> 812  
 <212> PRT  
 <213> B.fragilis

<400> 6485  
 Leu Ser Pro Ser Pro Asn Lys Glu Thr Pro Thr Met Lys Glu Asp Leu  
 1 5 10 15  
 Tyr Asp Asp Leu Tyr Glu Glu Lys Glu Glu Lys Ile Asp Phe His Ala

			20						25					30				
Leu	Leu	Phe 35	Arg	Tyr	Val	Ile	Arg	Trp	Pro	Trp	Phe	Val 45	Ala	Ser	Val			
Ile	Ile 50	Cys	Leu	Ala	Gly	Ala 55	Trp	Leu	His	Leu	Arg 60	Gln	Thr	Thr	Pro			
Val 65	Tyr	Asn	Ile	Ser	Ala 70	Ser	Val	Ile	Ile	Lys 75	Asp	Asp	Lys	Lys	Gly 80			
Gly	Asn	Ser	Gly	Gly 85	Asn	Leu	Ala	Ala	Leu 90	Glu	Gly	Leu	Gly	Leu 95	Val			
Asn	Ser	Val	Ser 100	Asn	Ile	Asp	Asn	Glu 105	Ile	Glu	Ile	Leu	Arg 110	Ser	Lys			
Thr	Leu 115	Val	Lys	His	Val	Val	Ser 120	Glu	Leu	Asn	Leu	Tyr 125	Thr	Thr	Tyr			
Ser	Val 130	Lys	Gly	Ser	Phe 135	Asn	Glu	Val	Glu	Leu	Tyr 140	Lys	Ser	Ser	Pro			
Val 145	Leu	Val	Gly	Leu	Thr 150	Pro	Gln	Glu	Ala	Asp 155	Arg	Leu	Pro	Gly	Pro 160			
Ala	Val	Phe	Glu	Leu 165	Thr	Leu	Ser	Pro	Gly 170	Asn	Arg	Leu	Asp 175	Val	Lys			
Ala	Thr	Val	Gly 180	Glu	Thr	Ser	Tyr	Asn 185	Lys	Lys	Phe	Ser 190	Lys	Leu	Pro			
Gly	Leu 195	Leu	Val	Thr	Pro	Ala	Gly 200	Thr	Phe	Thr	Phe 205	Thr	Leu	Ala	Gly			
Asp 210	Ser	Ala	Gly	Val	Ser 215	Glu	Pro	Gln	Thr	Leu	Thr 220	Ala	Val	Val	Ser			
Asn 225	Pro	Met	Gln	Thr	Ala 230	Lys	Arg	Tyr	Ala	Ala 235	Ala	Leu	Ser	Val	Glu 240			
Pro	Thr	Ser	Lys	Thr 245	Thr	Ser	Ile	Val	Ile 250	Val	Ser	Leu	Lys	Asn 255	Thr			
Asn	Lys	Arg 260	Arg	Gly	Glu	Asp	Phe 265	Ile	Asn	Arg	Leu 270	Ile	Glu	Val	Tyr			
Asn	Arg 275	Asn	Thr	Asn	Asn	Asp 280	Lys	Asn	Glu	Val	Ala 285	Glu	Lys	Thr	Glu			
Glu 290	Phe	Ile	Ala	Gly	Arg 295	Ile	Arg	Ile	Ile	Asn 300	Asp	Glu	Leu	Phe	Ser			
Thr 305	Glu	Lys	Glu	Leu	Glu 310	Thr	Phe	Lys	Arg	Asp 315	Ala	Gly	Leu	Thr	Asp 320			
Leu	Ala	Ser	Asp	Ala 325	Gln	Leu	Ala	Val	Ser 330	Glu	Asn	Ser	Ala	Tyr 335	Glu			
Lys	Gln	Arg 340	Val	Glu	Asn	Gly	Thr	Gln 345	Leu	Asn	Leu	Val 350	Arg	Tyr	Leu			
Ala	Glu 355	Tyr	Ile	Ser	Ala	Pro	Asp 360	Lys	Ile	Asn	Ala 365	Val	Leu	Pro	Val			
Asn 370	Val	Gly	Leu	Thr	Asp 375	Gln	Ser	Leu	Ser	Ser 380	Leu	Ile	Gly	Gln	Tyr			
Asn 385	Glu	Met	Val	Leu	Gln 390	Arg	Asn	Arg	Leu	Leu 395	Arg	Asn	Ser	Ser	Glu 400			
Ser	Asn	Pro	Val	Ile 405	Val	Asn	Leu	Asp	Ser 410	Gly	Ile	Arg	Ala	Met 415	Arg			
Glu	Asn	Ile	Leu	Thr 420	Thr	Ile	His	Ser 425	Val	Gln	Lys	Gly	Leu	Leu	Ile			
Thr	Lys 435	Ala	Asp	Leu	Asp	Arg	Gln 440	Ala	Asn	Lys	Phe 445	Asn	Arg	Arg	Ile			
Ser	Asn 450	Ala	Pro	Ala	Gln	Glu 455	Arg	Gln	Phe	Val	Ser 460	Ile	Ser	Arg	Gln			
Gln 465	Glu	Ile	Lys	Ala 470	Gly	Leu	Tyr	Leu	Met 475	Leu	Leu	Gln	Lys	Arg	Glu 480			
Glu	Asn	Ser	Ile	Ala 485	Leu	Ala	Ala	Thr 490	Ala	Asn	Asn	Ala	Lys	Ile	Val 495			

Asp	Glu	Ala	Met	Ala	Asp	Asn	Gly	Pro	Val	Ser	Pro	Lys	Thr	Lys	Thr
			500					505					510		
Ile	Tyr	Met	Ile	Ala	Leu	Val	Met	Gly	Met	Gly	Ile	Pro	Val	Ala	Ile
		515					520					525			
Ile	Tyr	Val	Met	Gly	Leu	Leu	Gln	Phe	Arg	Ile	Glu	Gly	Arg	Ala	Asp
		530				535					540				
Val	Glu	Lys	Leu	Thr	Ser	Ala	Pro	Ile	Ile	Gly	Asp	Ile	Pro	Leu	Ala
545					550					555					560
Glu	Glu	Gly	Asn	Gly	Lys	Ala	Gly	Gly	Ile	Ala	Val	Arg	Glu	Asn	Glu
			565						570					575	
Asn	Ser	Leu	Met	Ala	Glu	Thr	Phe	Arg	Gly	Ile	Arg	Thr	Asn	Leu	Gln
			580					585					590		
Phe	Met	Leu	Gly	Glu	Glu	Asn	Lys	Val	Ile	Leu	Val	Thr	Ser	Thr	Ile
		595					600					605			
Ser	Gly	Glu	Gly	Lys	Thr	Phe	Val	Ala	Thr	Asn	Leu	Ala	Ile	Ser	Leu
		610				615					620				
Ser	Leu	Leu	Gly	Lys	Arg	Val	Val	Ile	Val	Gly	Leu	Asp	Ile	Arg	Lys
625					630					635					640
Pro	Gly	Leu	Asn	Lys	Val	Phe	Asn	Leu	Ser	Gln	Lys	Glu	Lys	Gly	Ile
			645						650					655	
Thr	Gln	Phe	Leu	Ala	Gly	Pro	Gln	Thr	Thr	Asp	Leu	Met	Ser	Met	Val
			660					665					670		
Gln	Pro	Ser	Gly	Ile	Ser	Arg	Thr	Leu	Ser	Ile	Leu	Pro	Gly	Gly	Thr
		675					680					685			
Val	Pro	Pro	Asn	Pro	Thr	Glu	Leu	Leu	Ala	Arg	Gln	Ala	Leu	Val	Glu
		690				695					700				
Ala	Ile	Asp	Ile	Leu	Lys	Lys	His	Phe	Asp	Tyr	Ile	Val	Leu	Asp	Thr
705					710					715					720
Ala	Pro	Ile	Gly	Met	Val	Thr	Asp	Thr	Gln	Ile	Ile	Ala	Arg	Val	Ala
			725						730					735	
Asp	Leu	Ser	Val	Tyr	Val	Cys	Arg	Ala	Asp	Tyr	Thr	His	Lys	Ala	Asp
			740					745					750		
Tyr	Thr	Leu	Leu	Glu	Asp	Leu	Arg	Leu	Gly	Asn	Lys	Leu	Pro	Asn	Leu
		755				760						765			
Cys	Thr	Val	Ile	Asn	Gly	Leu	Asp	Met	Lys	Lys	Arg	Lys	Tyr	Gly	Tyr
		770				775					780				
Tyr	Tyr	Gly	Tyr	Gly	Lys	Tyr	Gly	Arg	Tyr	Tyr	Gly	Tyr	Gly	Lys	Lys
785					790					795					800
Tyr	Gly	Tyr	Gly	Tyr	Gly	Tyr	Gly	Gln	Lys	His	Asn				
			805						810						

&lt;210&gt; 6486

&lt;211&gt; 101

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6486

Asp	Tyr	Val	Ser	Leu	Cys	Gly	Glu	Leu	His	Glu	Glu	Val	His	Thr	Cys
1				5					10					15	
Tyr	Asn	Gly	Gly	Tyr	Arg	Arg	Gln	Leu	Ala	Gly	Asp	Arg	Met	Leu	Ile
		20					25					30			
Pro	Lys	Ala	Ser	Leu	Ser	Ser	Asp	Arg	Ser	Leu	Gln	Pro	Asp	Phe	Val
		35					40					45			
Lys	Leu	Asp	Ser	Leu	Val	Ile	Ala	His	Gln	Pro	Arg	Arg	Gly	Gly	Ile
		50				55					60				
Arg	Ser	Arg	Ala	Leu	Tyr	Thr	Pro	Pro	Val	Lys	Pro	Trp	Glu	Pro	Gly
65					70					75					80
Val	Pro	Glu	Val	Arg	Asn	Arg	Lys	Asp	Arg	Pro	Arg	Val	Lys	Leu	Val
				85					90					95	

Thr Gly Ala Lys Ser  
100

<210> 6487  
<211> 588  
<212> PRT  
<213> B.fragilis

<400> 6487

Leu Arg Ala Phe Ile Ile Met Thr Asp Met Thr Asp Ile Lys Asn Glu  
1 5 10 15  
Glu Ala Gly Glu Lys Lys Ser Leu Asn Phe Ile Glu Gln Ala Val Glu  
20 25 30  
Asn Asp Leu Lys Ala Gly Lys Asn Gly Gly Lys Val Gln Thr Arg Phe  
35 40 45  
Pro Pro Glu Pro Asn Gly Tyr Leu His Ile Gly His Ala Lys Ala Ile  
50 55 60  
Cys Leu Asp Phe Gly Ile Ala Ala Ala His Gly Gly Val Cys Asn Leu  
65 70 75 80  
Arg Phe Asp Asp Thr Asn Pro Thr Lys Glu Asp Met Glu Tyr Val Glu  
85 90 95  
Ala Ile Gln Glu Asp Ile Arg Trp Leu Gly Phe Gln Trp Gly Asn Val  
100 105 110  
Tyr Tyr Ala Ser Asp Tyr Phe Gln Gln Leu Trp Asp Phe Ala Val Thr  
115 120 125  
Leu Ile Lys Glu Gly Lys Ala Tyr Val Asp Glu Gln Thr Ser Glu Gln  
130 135 140  
Ile Ala Gln Gln Lys Gly Thr Pro Thr Gln Pro Gly Val Glu Ser Pro  
145 150 155 160  
Tyr Arg Asn Arg Pro Ile Glu Glu Ser Leu Ala Leu Phe Glu Lys Met  
165 170 175  
Asn Ser Asp Glu Ala Lys Glu Gly Ser Met Val Leu Arg Ala Lys Ile  
180 185 190  
Asp Met Ala Ser Pro Asn Met His Phe Arg Asp Pro Ile Met Tyr Arg  
195 200 205  
Ile Leu His Val Ala His His Arg Thr Gly Thr Gln Trp Lys Ala Tyr  
210 215 220  
Pro Met Tyr Asp Phe Ala His Gly Gln Ser Asp Tyr Phe Glu Gly Val  
225 230 235 240  
Thr His Ser Leu Cys Thr Leu Glu Phe Val Pro His Arg Pro Leu Tyr  
245 250 255  
Asp Leu Phe Ile Asp Trp Leu Lys Glu Gly Lys Asp Leu Asp Asp Asn  
260 265 270  
Arg Pro Arg Gln Thr Glu Phe Asn Lys Leu Asn Leu Asn Tyr Thr Leu  
275 280 285  
Met Ser Lys Arg Asn Leu Leu Ile Leu Val Lys Glu Gly Leu Val Asn  
290 295 300  
Asp Trp Asp Asp Pro Arg Met Pro Thr Leu Cys Gly Phe Arg Arg Arg  
305 310 315 320  
Gly Tyr Ser Pro Glu Ser Ile Arg Lys Phe Ile Asp Lys Ile Gly Tyr  
325 330 335  
Thr Thr Tyr Asp Ala Leu Asn Asp Phe Ala Leu Leu Glu Ser Ala Val  
340 345 350  
Arg Glu Asp Leu Asn Ala Arg Ala Thr Arg Val Ser Ala Val Leu Asn  
355 360 365  
Pro Val Lys Leu Ile Ile Thr Asn Tyr Pro Glu Gly Gln Val Glu Glu  
370 375 380  
Leu Glu Ala Ile Asn Asn Pro Glu Asp Pro Thr Ala Gly Ser His Thr  
385 390 395 400

6487 588 PRT B.fragilis



Ile Glu Phe Ser Arg Glu Leu Trp Met Glu Arg Asp Asp Phe Met Glu  
 405 410 415  
 Asp Ala Pro Lys Lys Tyr Phe Arg Met Thr Pro Gly Gln Glu Val Arg  
 420 425 430  
 Leu Lys Asn Ala Tyr Ile Val Lys Cys Thr Gly Cys Lys Lys Asp Glu  
 435 440 445  
 Asn Gly Thr Val Thr Glu Val Tyr Cys Glu Tyr Asp Pro Asn Thr Arg  
 450 455 460  
 Ser Gly Met Pro Asp Ala Asn Arg Lys Val Lys Gly Thr Leu His Trp  
 465 470 475 480  
 Leu Ser Cys Asn His Cys Leu Pro Ala Glu Val Arg Leu Tyr Asp Arg  
 485 490 495  
 Leu Trp Lys Val Glu Asn Pro Arg Asp Glu Met Ala Ala Ile Arg Glu  
 500 505 510  
 Ala Lys Gly Cys Asp Ala Leu Glu Ala Met Lys Glu Met Ile Asn Pro  
 515 520 525  
 Asp Ser Leu Thr Val Leu Pro His Cys Tyr Ile Glu Lys Tyr Val Ala  
 530 535 540  
 Asp Met Pro Ala Leu Ser Tyr Leu Gln Phe Gln Arg Ile Gly Tyr Phe  
 545 550 555 560  
 Asn Ile Asp Lys Asp Ser Thr Pro Gly His Leu Val Phe Asn Arg Thr  
 565 570 575  
 Val Gly Leu Lys Asp Thr Trp Gly Lys Ile Asn Lys  
 580 585

&lt;210&gt; 6488

&lt;211&gt; 224

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6488

Ala Leu Gln Leu Phe Asp Glu Lys Ala Ile Tyr Val Thr Asn Leu Met  
 1 5 10 15  
 Phe Lys Lys Met Lys Lys Asp Phe Asn Leu Thr Lys Leu Phe Tyr Ser  
 20 25 30  
 Phe Ala Ile Ala Phe Ser Val Val Thr Leu Ser Ser Cys Asn Asn Asp  
 35 40 45  
 Asp Asn Ser Pro Leu Pro Pro Ser Thr Asn Asp Val Ala Gly Thr  
 50 55 60  
 Tyr Asn Gly Lys Val Leu Ile Thr Gln Val Thr Pro Ala Thr Val Lys  
 65 70 75 80  
 Glu Asn Ala Gly Glu Ala Pro Gln Gly Gln Asp Val Asn Ala Thr Val  
 85 90 95  
 Lys Asn Asp Thr Val Phe Phe Asp Lys Leu Pro Val Thr Glu Leu Ile  
 100 105 110  
 Thr Ser Ile Val Gly Asp Lys Asp Lys Ala Glu Ala Ile Val Lys Ala  
 115 120 125  
 Ile Gly Asp Val Lys Tyr Lys Val Gly Tyr Lys Pro Ala Leu Asn Thr  
 130 135 140  
 Glu Lys Asp Ser Ile Tyr Leu Ala Phe Asp Pro Lys Pro Leu Thr Leu  
 145 150 155 160  
 Gln Leu Pro Ala Ala Val Glu Gly Gln Glu Gly Gln Thr Val Thr Val  
 165 170 175  
 Thr Ile Ser Ser Pro Asp Lys Gly Ser Phe Ala Tyr Lys Lys Asn Gln  
 180 185 190  
 Leu Lys Leu Lys Leu Ser Ala Asp Lys Val Glu Leu Ala Gly Val Ala  
 195 200 205  
 Val Pro Val Pro Gln Thr Leu Phe Asn Phe Asp Met Thr Lys Lys Lys  
 210 215 220

<210> 6489  
 <211> 172  
 <212> PRT  
 <213> B.fragilis

<400> 6489

Asn Leu Glu Leu Ser Ile Met Ala Thr Thr Asn Phe Lys Gly Gln Pro  
 1 5 10 15  
 Val Lys Leu Ile Gly Glu Phe Ile Gln Val Gly Lys Val Ala Pro Asp  
 20 25 30  
 Phe Glu Leu Val Lys Ser Asp Leu Ser Ser Phe Ala Leu Lys Asp Leu  
 35 40 45  
 Lys Gly Lys Asn Ile Val Leu Asn Ile Phe Pro Ser Leu Asp Thr Gly  
 50 55 60  
 Val Cys Ala Thr Ser Val Arg Lys Phe Asn Lys Met Ala Ala Gly Met  
 65 70 75 80  
 Lys Asp Thr Val Val Leu Ala Ile Ser Lys Asp Leu Pro Phe Ala Gln  
 85 90 95  
 Gly Arg Phe Cys Thr Thr Glu Gly Ile Glu Asn Val Ile Pro Leu Ser  
 100 105 110  
 Asp Phe Arg Phe Ser Asp Phe Asp Glu Ser Tyr Gly Val Arg Met Ala  
 115 120 125  
 Asp Gly Pro Leu Ala Gly Leu Leu Ala Arg Ala Val Val Ile Gly  
 130 135 140  
 Lys Asp Gly Lys Val Ala Tyr Thr Glu Leu Val Pro Glu Ile Thr Gln  
 145 150 155 160  
 Glu Pro Asp Tyr Glu Lys Ala Leu Ala Ala Val Lys  
 165 170

<210> 6490  
 <211> 379  
 <212> PRT  
 <213> B.fragilis

<400> 6490

Met Ile Asn Thr Pro Arg Lys Asn Gly Tyr Ser Phe Lys Tyr Gly Thr  
 1 5 10 15  
 Leu Phe Tyr Val Pro Phe Phe Ser Cys His Leu Gly Ile Ser Glu Thr  
 20 25 30  
 Phe Ile Arg Leu Tyr Ile Tyr Ala Ile Asp Phe Leu Leu Ile Ser Ser  
 35 40 45  
 Ile Phe Ser Asn Leu Ser Leu Lys Ile Phe Phe Ile Ile Asn Arg Val  
 50 55 60  
 Leu Glu His Thr Lys Lys Asn Lys Lys Met Glu Ile Glu Lys Phe Ile  
 65 70 75 80  
 Lys Ser Leu Ala Arg Lys Ala Lys Leu Gly Gly Arg Tyr Ser Thr Ala  
 85 90 95  
 Asn Thr Tyr Leu Tyr Thr Leu His Ser Phe Gln Lys Phe Ala Gly Lys  
 100 105 110  
 Ala Ser Leu Thr Phe Glu Glu Ile Thr Pro Glu Ser Ile Lys Glu Tyr  
 115 120 125  
 Glu Gln Tyr Leu Ile Leu Asn Gly Lys Arg Tyr Asn Thr Ile Ser Leu  
 130 135 140  
 Tyr Met Arg Met Leu Arg Ser Ile Cys Asn Gln Ala Ser Glu Gln Asn  
 145 150 155 160  
 Ile Ala Ser Leu Asn Thr Arg Glu Leu Phe Glu Asn Val Phe Ile Gly  
 165 170 175  
 Asn Glu Pro Thr Ala Lys Arg Ala Ile Ser Pro Val Leu Ile Ser Arg

180	185	190
Leu Leu Glu Ala Asp Phe Ser Lys Asn Ser Arg Leu Asp Phe Ala Arg		
195	200	205
Asp Leu Phe Leu Leu Ser Phe Tyr Leu Arg Gly Ile Pro Phe Val Asp		
210	215	220
Leu Val His Leu Arg Lys Thr Asp Val Gln Gly Asn Met Leu Val Tyr		
225	230	235
Phe Arg Gln Lys Thr Gly Gln Gln Leu Thr Val Ile Ile Glu Asn Cys		
245	250	255
Ala Lys Val Ile Leu Arg Lys Tyr Ala Ser Leu Cys Lys Glu Ser Val		
260	265	270
Tyr Leu Leu Pro Val Ile Ser Ala Ala Gly Glu Glu Gly His Lys Gln		
275	280	285
Tyr Arg Ser Ala Leu Arg Val Tyr Asn Lys Arg Leu Asn Gln Ile Ser		
290	295	300
Gly Ile Leu Lys Leu Lys Thr Pro Leu Thr Ser Tyr Val Ala Arg His		
305	310	315
Ser Trp Ala Thr Thr Ala Leu Gln Lys Gly Val Pro Val Ser Val Ile		
325	330	335
Ser Ala Gly Met Gly His Ala Ser Glu Lys Val Thr Tyr Ile Tyr Leu		
340	345	350
Ala Ser Phe Asp Asn Lys Thr Leu Ser Asn Ala Asn Lys Lys Val Ile		
355	360	365
Ala Ala Val Arg Phe Lys Lys Glu Glu Glu Glu		
370	375	

<210> 6491  
 <211> 155  
 <212> PRT  
 <213> B.fragilis

<400> 6491
Lys Glu Ser Thr Ile Met Ser Lys Glu Val Thr Tyr Ser Val Val Ala
1 5 10 15
Arg Lys Asn Met Leu Lys Lys Asp Asp Pro Ala Lys Tyr Tyr Ala Gln
20 25 30
Ala Gln Ala Ser Gly Asp Val Gly Leu Asp Glu Ile Ser Thr Arg Val
35 40 45
Glu Lys Ala Cys Thr Val His Ser Ala Asp Val Val Ala Val Leu Lys
50 55 60
Ala Leu Glu Asp Glu Met Val Asp Gly Leu Ser Arg Gly Glu Ile Val
65 70 75 80
Arg Leu Gly Asn Ile Gly Thr Phe Gln Val Gly Leu Arg Ser Arg Gly
85 90 95
Ala Glu Lys Ala Glu Asp Phe Lys Ala Ala Asn Ile Ser Lys Ala Arg
100 105 110
Val Asn Phe Arg Pro Gly Pro Val Leu Ala Asp Ala Met Lys Thr Leu
115 120 125
Asn Phe Ser Lys Val Ser Thr Arg Ala Ala Gln Lys Gly Asp Gly Gly
130 135 140
Gly Asp Gly Asp Ile Val Asp Asp Pro Thr Ala
145 150 155

<210> 6492  
 <211> 104  
 <212> PRT  
 <213> B.fragilis

<400> 6492

Lys His Thr Ala Phe Arg Ile Phe Phe Arg Thr Phe Thr Val Cys Asn  
 1 5 10 15  
 Asn Gln Ile Ile Lys Ala Met Asn Gln Arg Lys Glu Glu Asp Thr Thr  
 20 25 30  
 Glu Ala Asp Phe Ile Ile Arg Ser Tyr Thr Lys Ala Glu Leu Ala Gln  
 35 40 45  
 Leu Tyr Cys Pro Gly Leu Asp Pro Val Leu Ala Leu Gln Lys Leu Tyr  
 50 55 60  
 Arg Trp Met Arg Lys Asn Thr Ala Leu Thr Gln Ala Leu Ser Glu Val  
 65 70 75 80  
 Asn Tyr Asn Lys Tyr Arg His Ser Phe Leu Lys Arg Glu Val Arg Leu  
 85 90 95  
 Ile Val Tyr Tyr Leu Gly Glu Pro  
 100

<210> 6493  
 <211> 212  
 <212> PRT  
 <213> B.fragilis

<400> 6493  
 Thr Ile Gly Ala Arg Thr Leu Phe Thr Met Asp Asn Asn Leu Lys Asn  
 1 5 10 15  
 Lys Ile Asp Met Lys Thr Leu Phe Asp Glu Met Glu His Ala Val Lys  
 20 25 30  
 Asn Trp Trp Leu Ser Leu Ile Leu Gly Ile Leu Tyr Ile Ile Val Ala  
 35 40 45  
 Leu Cys Leu Leu Phe Ala Pro Gly Ser Ser Tyr Ile Ala Leu Ser Val  
 50 55 60  
 Ile Phe Ser Ile Ser Met Leu Ile Ser Gly Ile Ile Glu Ile Ile Phe  
 65 70 75 80  
 Ser Ile Ser Asn Arg Arg Gly Ile Ser Ser Trp Gly Trp Tyr Leu Ala  
 85 90 95  
 Gly Gly Ile Ile Asp Leu Ile Leu Gly Ile Tyr Leu Val Ala Tyr Pro  
 100 105 110  
 Leu Leu Ser Met Glu Val Ile Pro Phe Ile Val Ala Phe Trp Met Met  
 115 120 125  
 Phe Arg Gly Phe Ser Ala Thr Gly Tyr Ser Met Asp Leu Lys Arg Tyr  
 130 135 140  
 Gly Thr Arg Glu Trp Gly Trp Tyr Met Gly Phe Gly Ile Leu Ala Ile  
 145 150 155 160  
 Ile Cys Ser Leu Ile Ile Leu Trp Gln Pro Ala Val Gly Ala Leu Tyr  
 165 170 175  
 Val Ile Tyr Met Leu Ala Phe Thr Phe Leu Ile Ile Gly Phe Phe Arg  
 180 185 190  
 Val Met Leu Ser Phe Glu Leu Lys Ser Leu His Lys Arg Ser Thr Val  
 195 200 205  
 Met Asn Gly Lys  
 210

<210> 6494  
 <211> 482  
 <212> PRT  
 <213> B.fragilis

<400> 6494  
 Leu Leu Ile Lys Leu Gly Arg Lys Asn Ser Pro Ser Glu Arg Glu Arg  
 1 5 10 15  
 Glu Leu Gln Asn Leu Ile Ala Gln Tyr Glu Ala Val Lys Ala Lys Asn

[illegible]

<210> 6495  
 <211> 254  
 <212> PRT  
 <213> B.fragilis

<400> 6495

His Arg Cys Lys Leu Lys Met Ser Leu Met Lys Arg Ser Pro Thr Gly  
 1 5 10 15  
 Lys Ser Trp Gly Val Lys Ile Ser Arg Ser Gly Val Phe Arg Leu Glu  
 20 25 30  
 Asp Ile Thr His Tyr Tyr Ser Glu Glu Glu Leu Gly Glu Ala Tyr Glu  
 35 40 45  
 Asn Ala Gly Glu Lys Ile Met Glu Leu Ile Gln Lys Thr Pro Gly Ile  
 50 55 60  
 Val Ala Phe Ile Pro Gln Lys Phe Val Val Arg Pro Asp Ala Val His  
 65 70 75 80  
 Phe Ile Lys Asp Asn Thr Ile Ser Val Lys Glu Val Phe Ala Gly Ala  
 85 90 95  
 Glu Trp Phe Pro Thr Ala Thr Pro Ala Pro Leu Phe Gly Phe Leu Pro  
 100 105 110  
 Leu Ile Thr Gly Thr Leu Trp Val Ser Leu Phe Ala Ile Leu Ile Ala  
 115 120 125  
 Leu Pro Phe Gly Leu Ser Val Ser Ile Tyr Met Ser Glu Val Ala Asp  
 130 135 140  
 Ser Lys Val Arg Ser Trp Leu Lys Pro Val Ile Glu Leu Leu Ser Gly  
 145 150 155 160  
 Ile Pro Ser Val Val Tyr Gly Phe Phe Gly Leu Ile Val Ile Val Pro  
 165 170 175  
 Leu Ile Gln Lys Val Phe Asp Leu Pro Val Gly Glu Ser Gly Leu Ala  
 180 185 190  
 Gly Ser Ile Val Leu Ala Ile Met Ala Leu Pro Thr Ile Ile Thr Val  
 195 200 205  
 Thr Glu Asp Ala Met Arg Asn Cys Pro Arg Ala Met Arg Glu Ala Ser  
 210 215 220  
 Leu Ala Leu Gly Ala Ser Gln Trp Gln Thr Ile Tyr Lys Val Val Ile  
 225 230 235 240  
 Arg Leu His His Gly Ala Gly Arg Ile Arg Arg Leu Asp Leu  
 245 250

<210> 6496  
 <211> 424  
 <212> PRT  
 <213> B.fragilis

<400> 6496

Asn His Arg Asp Ala Phe Leu Ile Met Leu Leu Ser Val Ala Val Ala  
 1 5 10 15  
 Ile Thr Val Leu Leu Ser Val Ser Val Ile Ala Ala Val Phe Ser Val  
 20 25 30  
 Ser Ile Val Ile Ala Val Phe Pro Leu Phe His Val Gln Ala Val Asp  
 35 40 45  
 Tyr Gly Thr Gln Val Gly Glu Leu Val Ala Gln Ala Glu Ile Phe Glu  
 50 55 60  
 Gln Gly Ile Val Gly Phe Val Gly Ile Val Gly Ala Ala Asp Ile Asn  
 65 70 75 80  
 Arg Glu Val Gly His Pro Cys Asp Asp Leu Cys Val Gly His His Ser  
 85 90 95  
 Asp Gly Ser Gly Val Glu His Asp Ile Val Glu Val Leu Phe Glu Asp

100 105 110  
 Ile Asp Gly Phe His Gln Cys Leu Ala Cys Gln Gln Phe Gly Arg Val  
 115 120 125  
 Gly Arg Tyr Gly Ser Ala Gly Glu Asp Ala Gln Gly Ala Gly Tyr Pro  
 130 135 140  
 Gly Gly Leu His His Arg His Gln Val Gly Gly Leu Arg Ala Gly Gln  
 145 150 155 160  
 Glu Leu Gly Asp Ser Phe Phe Phe Leu Arg Glu Val Glu Asp Leu Val  
 165 170 175  
 Glu Ser Arg Leu Ala Asp Val Glu Pro Tyr Asp Asp Tyr Ser Phe Ala  
 180 185 190  
 Gln Gln Arg Glu Ala Asp Gly Glu Val Gly Gly Tyr Lys Cys Phe Ser  
 195 200 205  
 Phe Ala Ala Asp Gly Arg Gly Asp Gln Asp Asp Phe Ile Leu Phe Ala  
 210 215 220  
 Gln His Lys Leu Gln Val Gly Ala Asp Ala Pro Glu Gly Phe Arg His  
 225 230 235 240  
 Gln Ala Val Phe Val Phe Ala Asp Ser Asp Ala Ser Arg Phe Pro Val  
 245 250 255  
 Thr Leu Phe Gly Gln Gly Asp Val Ser Asp Asp Gly Gly Gly Gln  
 260 265 270  
 Leu Phe His Ile Gly Pro Ser Phe Tyr Pro Glu Leu Glu Gln Pro His  
 275 280 285  
 Asp Val Asp Asp Gly Tyr Gly Asp Ala His Pro His Asp Glu Gly Tyr  
 290 295 300  
 His Ile Asp Arg Phe Gly Leu Gly Arg Asn Gly Thr Val Val Arg His  
 305 310 315 320  
 Gly Leu Val Tyr Asp Leu Gly Val Val Gly Ser Gly Gly Gln Cys Asp  
 325 330 335  
 Gly Val Phe Phe Pro Phe Leu Gln Gln His Gln Val Glu Ser Gly Phe  
 340 345 350  
 Asp Leu Leu Leu Pro Gly Asp Ala Asp Glu Leu Ala Phe Leu Arg Gly  
 355 360 365  
 Arg Ile Ala Asp Ala Ala Val Glu Leu Val Gly Leu Thr Val Glu Val  
 370 375 380  
 Gly Leu Gly Asp Gln Gln Ser Phe Leu Asn Ala Val Asp Gly Gly Gln  
 385 390 395 400  
 Asp Val Phe Ala His Gly Thr Asp Ala Ala Ile Gln Val His Asp His  
 405 410 415  
 Arg Val Ala Phe Arg Gly Val Ala  
 420

&lt;210&gt; 6497

&lt;211&gt; 62

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6497

Glu Met Arg Trp Lys Glu Lys Lys Lys Leu Ile Lys Ile Lys Lys Met  
 1 5 10 15  
 Asn Lys Arg Asn Tyr Thr Thr Glu Glu His Arg Val Ser Gln Arg Ile  
 20 25 30  
 Phe Phe Pro His His Thr Lys Asp Glu Asn Pro Val Lys Leu Cys Val  
 35 40 45  
 Leu Cys Gly Glu Pro Pro His Ser Asn Ile Leu Lys Leu Arg  
 50 55 60

&lt;210&gt; 6498

&lt;211&gt; 153

<212> PRT  
 <213> B.fragilis

<400> 6498

Arg	His	Pro	Cys	His	Ala	Arg	Lys	His	Pro	Asp	His	His	Pro	Gln	Arg
1				5					10					15	
Ser	Glu	Arg	Ile	Ala	Asp	His	Gln	Gly	Arg	Pro	Arg	Pro	Ser	Gly	Gln
			20					25				30			
Gln	Val	Gln	Pro	Pro	His	Gln	Gln	Cys	Ala	Arg	Ala	Gly	Thr	Pro	Val
		35					40					45			
Arg	Gln	His	Leu	Pro	Ala	Ala	Gly	Asp	Gln	Ser	Arg	Thr	Leu	Pro	Asp
	50					55					60				
Ala	Val	Ala	Glu	Thr	Gly	Arg	Lys	Leu	His	Arg	Thr	Gly	Arg	His	Cys
65					70					75					80
Gln	Gln	Arg	Gln	Asp	Arg	Arg	Arg	Gly	His	Gly	Gly	Gln	Arg	Ser	Arg
				85					90					95	
Phe	Ser	Gln	Asp	Gln	Asn	Asp	Leu	Tyr	Asp	Ser	Pro	Arg	His	Gly	Asp
			100					105					110		
Gly	His	Pro	Arg	Ser	His	His	Leu	Arg	His	Gly	Ala	Ala	Pro	Val	Pro
		115					120					125			
Asp	Arg	Arg	Thr	Gly	Arg	Cys	Gly	Lys	Ala	Asp	Leu	Arg	Pro	His	His
	130					135					140				
Arg	Arg	His	Pro	Pro	Gly	Arg	Arg	Gly							
145					150										

<210> 6499

<211> 262

<212> PRT

<213> B.fragilis

<400> 6499

Met	Thr	Lys	Arg	Leu	Leu	Phe	Phe	Thr	Leu	Thr	Cys	Ile	Leu	Leu	Ala
1				5					10					15	
Ser	Cys	Gln	Ser	Tyr	Lys	Lys	Val	Pro	Tyr	Leu	Gln	Asp	Pro	Gly	Glu
			20					25				30			
Ala	Gln	Arg	Ala	Val	Ala	Glu	Ala	Lys	Leu	Tyr	Asp	Ala	Arg	Ile	Leu
		35					40					45			
Pro	Lys	Asp	Leu	Leu	Thr	Ile	Val	Val	Ser	Cys	Ser	Asp	Pro	Glu	Leu
	50					55					60				
Ala	Glu	Pro	Phe	Asn	Leu	Thr	Val	Ser	Thr	Pro	Val	Ser	Asn	Thr	Gln
65				70						75					80
Lys	Ser	Leu	Thr	Ser	Gln	Pro	Ala	Leu	Gln	Gln	Tyr	Leu	Val	Asp	Asn
				85					90					95	
Arg	Gly	Asn	Ile	Asp	Phe	Pro	Val	Leu	Gly	Thr	Leu	His	Ile	Gly	Gly
			100					105					110		
Leu	Thr	Lys	Gly	Glu	Ala	Glu	Ser	Leu	Ile	Arg	Glu	Lys	Leu	Lys	Gly
		115					120					125			
Tyr	Ile	Lys	Glu	Asn	Thr	Ile	Val	Thr	Val	Arg	Met	Ala	Asn	Tyr	Lys
	130					135					140				
Ile	Ser	Val	Ile	Gly	Glu	Val	Asn	Arg	Pro	Gly	Thr	Phe	Thr	Ile	Ser
145					150					155					160
Asn	Glu	Lys	Val	Asn	Leu	Phe	Glu	Ala	Leu	Ala	Met	Ala	Gly	Asp	Met
			165					170						175	
Thr	Val	Tyr	Gly	Leu	Arg	Asp	Asn	Val	Arg	Leu	Ile	Arg	Glu	Asp	Ala
		180						185					190		
Asp	Gly	His	Gln	His	Ile	Ile	Thr	Leu	Asn	Met	Asn	Arg	Ala	Asp	Ile
		195					200					205			
Ile	Gln	Ser	Pro	Tyr	Tyr	Tyr	Leu	Gln	Gln	Asn	Asp	Ile	Leu	Tyr	Val
	210						215				220				



Thr Pro Asn Lys Thr Lys Ala Lys Thr Ala Asp Ile Ser Ala Ser Thr  
 225 230 235 240  
 Thr Ile Trp Phe Ser Val Val Gly Thr Leu Val Ser Leu Ala Ser Leu  
 245 250 255  
 Ile Ile Thr Ile Ala Lys  
 260

<210> 6500

<211> 149

<212> PRT

<213> B.fragilis

<400> 6500

Lys Ser Lys Gly Met Lys Lys Val Phe Glu Arg Ile Ile Glu Gly Ile  
 1 5 10 15  
 Leu Thr Cys Ser Gly Phe Val Thr Ser Ile Thr Ile Leu Leu Ile Val  
 20 25 30  
 Leu Phe Leu Phe Thr Glu Ala Phe Gly Leu Phe Ser Ser Lys Val Ile  
 35 40 45  
 Glu Glu Gly Tyr Val Leu Ala Leu Asn Lys Asp Asn Lys Val Ser Glu  
 50 55 60  
 Leu Thr Pro Met Gln Ile Lys Asp Val Phe Asp Glu Glu Ile Thr Asn  
 65 70 75 80  
 Trp Lys Glu Leu Gly Gly Glu Asp Leu Pro Ile Arg Gly Val Pro Ser  
 85 90 95  
 Gly Arg His His Ala Leu Leu Leu Gly Arg Arg Thr Gly Arg Ser Leu  
 100 105 110  
 Arg Glu Cys Arg Gly Lys Asp Tyr Gly Ala Asp Ser Glu Asn Thr Arg  
 115 120 125  
 Tyr Arg Cys Phe Tyr Ser Ser Glu Val Cys Gly Thr Ala Gly Cys Gly  
 130 135 140  
 Thr Phe His Lys Gly  
 145

<210> 6501

<211> 470

<212> PRT

<213> B.fragilis

<400> 6501

Lys Tyr Ser Met Lys Gln Val Leu Arg Phe Asn Lys Val Ile Lys Arg  
 1 5 10 15  
 Ile Val Phe Thr Gly Asp Leu Ile Leu Leu Asn Gly Thr Phe Leu Ser  
 20 25 30  
 Leu Tyr Thr Leu Leu Gly Ser Lys Phe Phe Ala Asp Pro Phe Ile His  
 35 40 45  
 Ser Leu Pro Gln Val Leu Val Leu Leu Asn Leu Cys Tyr Leu Val Ser  
 50 55 60  
 Asn Met Ser Ser Gly Ile Ile Leu His Arg Arg Val Val Arg Pro Glu  
 65 70 75 80  
 Gln Ile Val Trp Arg Ala Leu Arg Asn Ser Ala Gly His Ala Leu Phe  
 85 90 95  
 Phe Ser Cys Ala Leu Thr Phe Gly Asn Phe Gly Ile Leu Ser Ala Arg  
 100 105 110  
 Phe Phe Leu Phe Tyr Ile Ala Phe Thr Leu Leu Leu Val Cys Tyr  
 115 120 125  
 Arg Leu Leu Phe Arg Lys Ile Leu Lys Ser Tyr Arg Lys His Gly Gly  
 130 135 140  
 Asn Ser Arg Ser Ile Ile Leu Val Gly Ser Asn Ser Asn Ile Ile Glu

145 150 155 160  
 Leu Tyr His Gln Met Thr Asp Asp Val Thr Ser Gly Phe Arg Val Ile  
 165 170 175  
 Gly Tyr Phe Asp Asp Gln Pro Gly Ser Arg Phe Pro Glu Lys Val Asn  
 180 185 190  
 Tyr Leu Gly Lys Pro Gly Lys Ile Val Asp Arg Leu Lys Gln Gly Gly  
 195 200 205  
 Val Glu Gln Val Tyr Cys Cys Leu Pro Ser Ala Arg Ser Glu Glu Ile  
 210 215 220  
 Leu Pro Ile Ile Asp Tyr Cys Glu Asn His Leu Ile Arg Phe Phe Ser  
 225 230 235 240  
 Val Pro Asn Val Arg Ser Tyr Leu Lys Arg Arg Met Tyr Phe Glu Leu  
 245 250 255  
 Leu Gly Asn Val Pro Val Leu Cys Ile Arg Gln Glu Pro Leu Ser Phe  
 260 265 270  
 Ala Glu Asn Arg Phe Arg Lys Arg Val Phe Asp Ile Ala Phe Ser Leu  
 275 280 285  
 Leu Phe Leu Cys Thr Leu Phe Pro Ile Ile Tyr Val Ile Val Gly Leu  
 290 295 300  
 Thr Ile Lys Ile Thr Ser Pro Gly Pro Ile Phe Phe Lys Gln Lys Arg  
 305 310 315 320  
 Ser Gly Glu Asp Gly Arg Glu Phe Trp Cys Tyr Lys Phe Arg Ser Met  
 325 330 335  
 Lys Val Asn Thr Gln Ser Asp Thr Leu Gln Ala Thr Leu His Asp Pro  
 340 345 350  
 Arg Lys Thr Arg Phe Gly Asn Phe Leu Arg Lys Ser Ser Ile Asp Glu  
 355 360 365  
 Leu Pro Gln Phe Ile Asn Val Leu Met Gly Asp Met Ser Val Val Gly  
 370 375 380  
 Pro Arg Pro His Met Leu Lys His Thr Glu Gln Tyr Ser Gln Leu Ile  
 385 390 395 400  
 Asn Lys Tyr Met Val Arg His Phe Val Lys Pro Gly Val Thr Gly Trp  
 405 410 415  
 Ala Gln Val Thr Gly Phe Arg Gly Glu Thr His Glu Leu Trp Gln Met  
 420 425 430  
 Glu Gly Arg Val Gln Arg Asp Ile Trp Tyr Ile Glu His Trp Thr Phe  
 435 440 445  
 Met Leu Asp Leu Tyr Ile Ile Tyr Lys Thr Val Arg Asn Ala Leu Glu  
 450 455 460  
 Gly Glu Lys Glu Ala Tyr  
 465 470

&lt;210&gt; 6502

&lt;211&gt; 198

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6502

Ile Met Val Ile Ala Tyr Leu Arg Val Ser Thr Glu Lys Gln Phe Leu  
 1 5 10 15  
 Ala Asn Gln Lys Glu Glu Ile Met Arg Phe Ala Glu Lys Asn Gly Leu  
 20 25 30  
 Ser Ile Asp Lys Trp Tyr Thr Glu Thr Val Ser Gly Ser Val Ser Thr  
 35 40 45  
 Lys Asp Arg Lys Leu Ser Glu Leu Leu Lys Arg Met His Pro Gly Asp  
 50 55 60  
 Thr Leu Ile Val Thr Glu Ile Ser Arg Leu Ser Arg Thr Leu Leu Glu  
 65 70 75 80  
 Ile Met Thr Ile Leu Asn Phe Cys Ile Lys Lys Gln Val Val Leu Tyr

				85				90					95				
Ser	Thr	Lys	Glu	Gly	Tyr	Val	Phe	Gln	Asp	Asp	Ile	Asn	Ser	Lys	Val		
			100					105					110				
Leu	Gly	Phe	Ala	Phe	Gly	Leu	Met	Ala	Glu	Ile	Glu	Arg	Asn	Leu	Ile		
		115					120					125					
Ser	Met	Arg	Thr	Lys	Glu	Ala	Leu	Ala	Arg	Arg	Lys	Gln	Glu	Gly	Met		
	130						135					140					
Thr	Leu	Gly	Arg	Lys	Lys	Gly	Asp	Thr	Pro	Lys	Ile	Lys	Leu	Leu	Arg		
145					150					155					160		
Ala	Asn	Lys	Arg	Val	Leu	Thr	Lys	Glu	Leu	Asp	Lys	Gly	Thr	Thr	Tyr		
				165					170						175		
Ser	Glu	Leu	Ala	Glu	Lys	Met	Gly	Val	Ser	Arg	Thr	Thr	Leu	Phe	Arg		
			180					185					190				
Phe	Met	Lys	Thr	Met	Tyr												
		195															

&lt;210&gt; 6503

&lt;211&gt; 216

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6503

Ile	Lys	Gln	Met	Glu	Ser	Val	Ala	Phe	Ile	Gln	Trp	Cys	Leu	Asp	His		
1				5					10					15			
Leu	Asn	Tyr	Trp	Thr	Ile	Thr	Leu	Leu	Met	Thr	Ile	Glu	Ser	Ser	Phe		
			20					25					30				
Ile	Pro	Phe	Pro	Ser	Glu	Val	Val	Val	Pro	Pro	Ala	Ala	Tyr	Lys	Ala		
		35					40					45					
Ala	Val	Asn	Glu	Glu	Leu	Asn	Ile	Tyr	Leu	Val	Val	Leu	Phe	Ala	Thr		
	50					55					60						
Leu	Gly	Ala	Asn	Leu	Gly	Ala	Ile	Ile	Asn	Tyr	Tyr	Leu	Ala	Arg	Trp		
65				70					75					80			
Leu	Gly	Arg	Pro	Ile	Val	Tyr	Lys	Phe	Ala	Asn	Ser	Arg	Phe	Gly	His		
				85					90					95			
Met	Cys	Leu	Ile	Asp	Glu	Ala	Lys	Val	Gln	His	Ala	Glu	Glu	Tyr	Phe		
		100						105					110				
Asp	Lys	His	Gly	Ala	Leu	Ser	Thr	Phe	Ile	Gly	Arg	Leu	Ile	Pro	Ala		
		115					120					125					
Val	Arg	Gln	Leu	Ile	Ser	Ile	Pro	Ala	Gly	Leu	Ala	Arg	Met	Lys	Leu		
	130					135					140						
His	Thr	Phe	Leu	Ile	Tyr	Thr	Thr	Leu	Gly	Ala	Gly	Leu	Trp	Asn	Thr		
145				150					155					160			
Ile	Leu	Ala	Ala	Ile	Gly	Tyr	Tyr	Leu	Ser	Thr	Val	Pro	Gly	Ile	Glu		
				165					170					175			
Ser	Glu	Glu	Gln	Leu	Leu	Ala	Lys	Val	Thr	Glu	Tyr	Ser	His	Glu	Leu		
			180					185					190				
Gly	Tyr	Cys	Phe	Ile	Val	Ile	Gly	Val	Phe	Ile	Val	Gly	Phe	Leu	Val		
		195					200					205					
Tyr	Lys	Gly	Met	Lys	Lys	Lys	Lys										
		210				215											

&lt;210&gt; 6504

&lt;211&gt; 163

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6504

Cys	Phe	Ser	Val	Gly	Gly	Met	Ser	Lys	Asn	Glu	Gly	Gly	Ser	Met	Arg		
1				5					10					15			

Lys Ile Asp Leu Ile Val Ile His Cys Ser Ala Thr Arg Glu Asp Arg  
 20 25 30  
 Cys Phe Thr Glu Phe Asp Leu Asp Val Cys His Arg Arg Arg Gly Phe  
 35 40 45  
 Asn Gly Pro Gly Tyr His Phe Tyr Ile Arg Lys Asp Gly Arg Ile Val  
 50 55 60  
 Ser Thr Arg Pro Val Glu Lys Ile Gly Ala His Ala Lys Gly His Asn  
 65 70 75 80  
 Ala Thr Ser Ile Gly Ile Cys Tyr Glu Gly Leu Asp Ala Arg Gly  
 85 90 95  
 Arg Pro Lys Asp Thr Arg Thr Glu Trp Gln Val His Ser Met Arg Val  
 100 105 110  
 Leu Val Lys Thr Leu Leu Lys Gln Tyr Pro Gly Ser Arg Val Cys Gly  
 115 120 125  
 His Arg Asp Leu Ser Pro Asp Leu Asn Ala Asn Gly Glu Ile Glu Pro  
 130 135 140  
 Glu Glu Trp Ile Lys Gln Cys Pro Cys Phe Asn Val Ile Glu Asp Lys  
 145 150 155 160  
 Lys Leu His

<210> 6505  
 <211> 285  
 <212> PRT  
 <213> B.fragilis

<400> 6505  
 Asn Ser Gly Val Leu Cys Gly Glu Ser Asn Ser Lys Leu Asn His Met  
 1 5 10 15  
 Lys Ile Arg Thr Ile Leu Phe Gly Arg Leu Ser Leu Ala Ala Leu His  
 20 25 30  
 Ala Asn Ala Gln Arg Ile Lys Gly Ser Asp Thr Val Leu Pro Val Ala  
 35 40 45  
 Gln Gln Thr Ala Glu Arg Phe Met Asn Arg Glu Pro Asp Ala Arg Val  
 50 55 60  
 Thr Val Thr Gly Gly Gly Thr Gly Val Gly Ile Ser Ala Leu Met Asp  
 65 70 75 80  
 Asn Thr Thr Asp Ile Ala Met Ala Ser Arg Pro Ile Lys Phe Ser Glu  
 85 90 95  
 Lys Met Lys Ala Lys Ala Ala Lys Arg Asp Ile Asp Glu Val Ile Val  
 100 105 110  
 Ala Tyr Asp Ala Leu Ala Val Val Val His Pro Ser Asp Pro Val Lys  
 115 120 125  
 Lys Leu Thr Arg Arg Gln Leu Glu Asp Ile Phe Arg Gly Lys Ile Thr  
 130 135 140  
 Asn Trp Lys Gln Val Gly Gly Asp Asp Arg Lys Ile Val Val Tyr Ser  
 145 150 155 160  
 Arg Glu Thr Ser Ser Gly Thr Tyr Glu Phe Phe Lys Glu Ser Val Leu  
 165 170 175  
 Lys Asn Lys Asn Tyr Met Ser Ser Ser Leu Ser Met Pro Ala Thr Gly  
 180 185 190  
 Ala Ile Ile Gln Ser Val Ser Gln Thr Lys Gly Ala Ile Gly Tyr Val  
 195 200 205  
 Gly Leu Ala Tyr Val Ser Pro Arg Ile Lys Thr Leu Ser Ile Ser Tyr  
 210 215 220  
 Asp Gly Glu His Tyr Ala Thr Pro Thr Val Glu Asn Ala Thr Asn Lys  
 225 230 235 240  
 Thr Tyr Pro Ile Val Arg Pro Leu Tyr Tyr Tyr Tyr Asp Ala Lys Asn  
 245 250 255

1  
 2  
 3  
 4  
 5  
 6  
 7  
 8  
 9  
 10  
 11  
 12  
 13  
 14  
 15  
 16  
 17  
 18  
 19  
 20  
 21  
 22  
 23  
 24  
 25  
 26  
 27  
 28  
 29  
 30  
 31  
 32  
 33  
 34  
 35  
 36  
 37  
 38  
 39  
 40  
 41  
 42  
 43  
 44  
 45  
 46  
 47  
 48  
 49  
 50  
 51  
 52  
 53  
 54  
 55  
 56  
 57  
 58  
 59  
 60  
 61  
 62  
 63  
 64  
 65  
 66  
 67  
 68  
 69  
 70  
 71  
 72  
 73  
 74  
 75  
 76  
 77  
 78  
 79  
 80  
 81  
 82  
 83  
 84  
 85  
 86  
 87  
 88  
 89  
 90  
 91  
 92  
 93  
 94  
 95  
 96  
 97  
 98  
 99  
 100  
 101  
 102  
 103  
 104  
 105  
 106  
 107  
 108  
 109  
 110  
 111  
 112  
 113  
 114  
 115  
 116  
 117  
 118  
 119  
 120  
 121  
 122  
 123  
 124  
 125  
 126  
 127  
 128  
 129  
 130  
 131  
 132  
 133  
 134  
 135  
 136  
 137  
 138  
 139  
 140  
 141  
 142  
 143  
 144  
 145  
 146  
 147  
 148  
 149  
 150  
 151  
 152  
 153  
 154  
 155  
 156  
 157  
 158  
 159  
 160  
 161  
 162  
 163  
 164  
 165  
 166  
 167  
 168  
 169  
 170  
 171  
 172  
 173  
 174  
 175  
 176  
 177  
 178  
 179  
 180  
 181  
 182  
 183  
 184  
 185  
 186  
 187  
 188  
 189  
 190  
 191  
 192  
 193  
 194  
 195  
 196  
 197  
 198  
 199  
 200  
 201  
 202  
 203  
 204  
 205  
 206  
 207  
 208  
 209  
 210  
 211  
 212  
 213  
 214  
 215  
 216  
 217  
 218  
 219  
 220  
 221  
 222  
 223  
 224  
 225  
 226  
 227  
 228  
 229  
 230  
 231  
 232  
 233  
 234  
 235  
 236  
 237  
 238  
 239  
 240  
 241  
 242  
 243  
 244  
 245  
 246  
 247  
 248  
 249  
 250  
 251  
 252  
 253  
 254  
 255

Lys Thr Gln Ile Ala Pro Leu Leu Glu Phe Ile Leu Ser Pro Glu Gly  
                   260                  265                  270  
 Gln Asp Ile Ile Lys Lys Ser Gly Tyr Ile Pro Val Lys  
                   275                  280                  285

<210> 6506  
 <211> 147  
 <212> PRT  
 <213> B.fragilis

<400> 6506

Leu Met Met Phe Leu Ile Phe Lys Tyr Tyr Thr Ile Met Lys Thr Met  
 1                  5                  10                  15  
 Ile Ile Ser Ile Ile Ala Val Leu Ala Ser Val Ala Val Ser Gly Gln  
                   20                  25                  30  
 Ser Leu Thr Leu Thr Val Lys Asp Val Glu His Val Glu Gly Thr Leu  
                   35                  40                  45  
 Tyr Val Ala Ile Tyr Ser Ser Lys Glu Asn Phe Met Lys Lys Pro Leu  
                   50                  55                  60  
 Phe Gly Phe Arg Val Ala Val Lys Asp Arg Thr Met Thr Ile Pro Cys  
 65                  70                  75                  80  
 Lys Gly Ile Pro Ala Gly Thr Tyr Ala Ile Ser Leu Phe Gln Asp Glu  
                   85                  90                  95  
 Asn Gly Asn Gly Lys Leu Asp Thr Gly Ser Phe Gly Arg Pro Leu Glu  
                   100                  105                  110  
 Lys Phe Gly Phe Ser Asn Asp Ala Glu Gly Ile Met Gly Ala Pro Ser  
                   115                  120                  125  
 Tyr Glu Lys Cys Cys Phe Glu Phe Lys Arg Asp Thr Thr Val Val Ile  
                   130                  135                  140  
 His Leu Lys  
 145

<210> 6507  
 <211> 681  
 <212> PRT  
 <213> B.fragilis

<400> 6507

Leu Leu Ile Thr Lys Gly Cys Ser Ser Ser His Val Arg Cys Cys Leu  
 1                  5                  10                  15  
 Ser His Ile Arg Ala Val Arg Pro Gly Tyr Phe Phe Ala Leu Cys Gln  
                   20                  25                  30  
 Ser Phe Met Phe Ala Asp Glu Asn Val Ser Lys Gln Ile Thr Met Lys  
                   35                  40                  45  
 Gly Phe Tyr Val Pro Ala Ala Leu Ser Leu Met Leu Leu Ser Leu Pro  
                   50                  55                  60  
 Ile Ala Ala Gln Ser Val Ala Thr Asp Thr Ile Leu Leu Ala Thr Phe  
 65                  70                  75                  80  
 Asn Asp Ser Ile Ser Leu Asp Glu Val Val Ile Lys Ala His Lys Thr  
                   85                  90                  95  
 Pro Arg Ala Asn Ser Arg Trp Ser Asp Leu Gln Pro Val Asp Leu Val  
                   100                  105                  110  
 Thr Val Gly Gly Ser Asn Gly Asp Leu Tyr Arg Ala Leu Gln Thr Leu  
                   115                  120                  125  
 Pro Gly Ala Gln Leu Gln Gly Glu Ser Gly Arg Leu Leu Val Arg Gly  
                   130                  135                  140  
 Gly Asn Ser Asn Glu Thr Gln Thr Tyr Ile Asp Gly Met His Val Leu  
 145                  150                  155                  160  
 Asn Pro Tyr Thr Thr Thr Gly Thr Asp Thr Pro Ala Arg Gly Arg Tyr

				165					170					175	
Ser	Thr	Phe	Met	Phe	Ser	Gly	Val	Asn	Leu	Ala	Ser	Gly	Gly	Gln	Ser
			180					185					190		
Gln	Glu	Tyr	Gly	Glu	Ala	Leu	Ser	Ala	Val	Leu	Pro	Leu	Glu	Thr	Lys
		195					200					205			
Asp	Tyr	Ser	Thr	Val	Asn	Lys	Phe	Gly	Met	Asn	Val	Ser	Thr	Val	Gly
	210					215					220				
Met	Gly	Gly	Gly	Gly	Thr	Arg	Ala	Phe	Asn	Arg	Ser	Ser	Leu	Ser	Leu
225					230					235					240
Asn	Leu	Asp	Tyr	Gln	Asn	Leu	Ala	Pro	Tyr	Asp	Arg	Val	Tyr	Pro	Ser
				245					250					255	
Arg	Thr	Asp	Phe	Lys	Arg	Pro	Tyr	Arg	Met	Leu	Ser	Gly	Ala	Thr	Gln
			260					265					270		
Phe	Arg	Tyr	Thr	Pro	Asn	Glu	Lys	Ile	Leu	Phe	Lys	Phe	Tyr	Ala	Gly
		275					280					285			
Tyr	Asp	Arg	Thr	Asp	Phe	Ser	Asn	Tyr	Thr	Asp	Ile	Asp	Arg	His	Leu
	290					295					300				
Phe	Gly	Leu	Gly	Glu	Asn	Asn	Ile	Tyr	Leu	Asn	Thr	Thr	Phe	Arg	Lys
305					310					315					320
Arg	Thr	Ala	Ser	Asp	Trp	Asn	Trp	Phe	Ile	Gly	Thr	Ala	Tyr	Ser	Phe
				325					330					335	
Tyr	Asp	Arg	Lys	Val	Lys	Gly	Ala	Val	Lys	Asp	Arg	Asp	Val	Trp	Asn
			340					345					350		
Glu	Arg	Gln	Gln	Glu	Phe	His	Leu	Lys	Ala	Lys	Phe	Ser	Lys	Leu	Phe
		355					360					365			
Thr	Ser	Arg	Leu	Arg	Leu	Asp	Met	Gly	Val	Glu	Thr	Phe	Val	Arg	Ser
	370					375					380				
Tyr	Arg	Asn	Asp	Tyr	Gln	Leu	Glu	Thr	Leu	Arg	Asp	Thr	His	Gln	Met
385					390					395					400
Tyr	Pro	Thr	Ile	Tyr	Ala	Gly	Phe	Leu	Ser	Ser	Ala	Phe	Tyr	Leu	Ser
				405					410					415	
Glu	Asn	Leu	Lys	Thr	Glu	Ile	Ser	Leu	Arg	Pro	Glu	Tyr	Thr	Ser	Leu
			420					425					430		
Asn	Arg	Thr	Met	Asn	Trp	Ser	Pro	Arg	Ala	Ala	Val	Ser	Tyr	Thr	Trp
		435					440					445			
Asn	His	Leu	Leu	Val	Ser	Val	Val	Ala	Gly	Gln	Tyr	Thr	Gln	Leu	Pro
	450					455					460				
Glu	Asn	Asp	Tyr	Leu	Ile	Arg	Asn	Ile	Ser	Leu	Pro	Ser	Asn	Val	Cys
465					470					475					480
Arg	Gln	Val	Leu	Phe	Ser	Leu	Gln	Tyr	Glu	Gln	Gly	Gly	Arg	Phe	Tyr
				485					490					495	
Lys	Ala	Glu	Phe	Tyr	Tyr	Lys	Asn	Tyr	Lys	Lys	Leu	Glu	Leu	Ser	Val
			500					505					510		
Pro	Asp	Gly	Ile	Thr	Pro	Asp	Gly	Tyr	Gly	Tyr	Ser	Lys	Gly	Ile	Asp
		515													

Gly	Arg	Lys	Asn	Glu	Tyr	Gly	Arg	Ile	Asp	Gly	Glu	Ala	Val	Arg	Thr
				645					650					655	
Ser	Ser	Asp	His	Phe	Phe	Tyr	Leu	Gly	Val	Tyr	Ile	Thr	Leu	Gly	Lys
			660					665					670		
Lys	Val	Ala	Tyr	Asp	Val	Ser	Asn	Phe							
		675					680								

&lt;210&gt; 6508

&lt;211&gt; 399

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6508

Asn	Glu	His	Phe	Lys	Ile	Lys	Thr	Ile	Val	Met	Ile	Asp	Leu	Gly	Ser
1				5					10					15	
Trp	Met	Asn	Lys	Ile	Leu	Ile	Gly	Trp	Gly	Val	Asp	Pro	Lys	Ile	Ala
			20					25					30		
Asn	Thr	Phe	Asp	Glu	Thr	Ile	Ile	Ala	Ile	Leu	Met	Ile	Phe	Ile	Ala
		35					40					45			
Val	Gly	Leu	Asp	Tyr	Leu	Cys	Gln	Ala	Ile	Phe	Val	Gly	Gly	Met	Lys
	50					55					60				
Arg	Leu	Ala	Arg	Lys	Thr	Ser	Tyr	Lys	Trp	Asp	Thr	Leu	Met	Val	Lys
65					70					75					80
His	Lys	Val	Ile	His	His	Leu	Ile	His	Ile	Leu	Pro	Gly	Ile	Leu	Met
				85					90					95	
Tyr	Met	Leu	Leu	Pro	Met	Ala	Phe	Val	His	Gly	Lys	Thr	Leu	Leu	Leu
			100					105					110		
Val	Ser	Gln	Lys	Ile	Cys	Val	Ile	Tyr	Met	Ile	Phe	Ala	Leu	Leu	Leu
		115					120					125			
Ala	Leu	Asn	Ser	Ser	Leu	Leu	Met	Leu	Leu	Asp	Ile	Leu	Ser	Ala	Lys
	130						135				140				
Glu	Lys	Leu	Lys	Asp	Arg	Pro	Met	Lys	Gly	Phe	Ile	Gln	Val	Leu	Gln
145					150					155					160
Val	Leu	Val	Phe	Phe	Ile	Gly	Gly	Ile	Val	Ile	Val	Ala	Ile	Ile	Val
			165					170						175	
Asp	Lys	Ser	Pro	Ala	Thr	Leu	Phe	Ala	Gly	Leu	Gly	Ala	Ser	Ala	Ala
			180					185					190		
Ile	Leu	Met	Leu	Val	Phe	Lys	Asp	Ser	Ile	Leu	Gly	Phe	Val	Ala	Gly
		195					200					205			
Ile	Gln	Leu	Ser	Ala	Asn	Asp	Met	Ile	Arg	Pro	Gly	Asp	Trp	Val	Thr
	210					215					220				
Ile	Pro	Ser	Thr	Asn	Ala	Asn	Gly	Ile	Val	Glu	Glu	Ile	Thr	Leu	Asn
225				230						235					240
Thr	Val	Lys	Ile	Gln	Asn	Phe	Asp	Asn	Thr	Ile	Ser	Thr	Val	Pro	Pro
				245					250					255	
Tyr	Ser	Leu	Val	Asn	Gly	Ser	Phe	Gln	Asn	Trp	Arg	Gly	Met	Thr	Glu
			260					265					270		
Ser	Gly	Gly	Arg	Arg	Val	Met	Lys	Ser	Ile	Phe	Leu	Asp	Leu	Thr	Thr
		275					280					285			
Leu	Lys	Phe	Cys	Thr	Pro	Glu	Met	Leu	Asp	Thr	Phe	Arg	Lys	Glu	Ile
	290					295					300				
Pro	Leu	Leu	Ala	Asp	Tyr	Gln	Pro	Glu	Glu	Gly	Val	Ile	Pro	Thr	Asn
305					310					315					320
Ser	Gln	Val	Phe	Arg	Val	Tyr	Val	Glu	Arg	Tyr	Leu	Cys	Ser	Leu	Pro
				325					330					335	
Val	Val	Asn	Gln	Asp	Leu	Asp	Leu	Ile	Ile	Ser	Gln	Lys	Glu	Ala	Thr
			340					345					350		
Glu	Tyr	Gly	Val	Pro	Ile	Gln	Ile	Tyr	Phe	Phe	Ser	Arg	Asn	Lys	Ile
		355					360								

Trp Lys Glu Tyr Glu Arg Ile Gln Ser Asp Ile Phe Asp His Phe Phe  
 370 375 380  
 Ala Met Ile Pro Lys Phe Glu Leu Lys Val Tyr Gln Tyr Ser Asp  
 385 390 395

<210> 6509  
 <211> 620  
 <212> PRT  
 <213> B.fragilis

<400> 6509

Asn Thr Asn Gln Ser Ile Ser Pro Gln Lys His Asn Asn Thr Phe Met  
 1 5 10 15  
 Lys Lys Leu Ile Leu Ser Thr Ala Leu Leu Ala Ala Ile Cys Thr Ala  
 20 25 30  
 Gly Gln Ala Gln Glu Thr Asn Asp Tyr Tyr Val Lys His Val Glu Phe  
 35 40 45  
 Pro Gln Gly Ala Thr Leu Glu Gln Lys Val Asp Met Ala Ala Arg Leu  
 50 55 60  
 Val Pro Thr Pro Gln Gln Leu Glu Trp Gln Gln Met Glu Leu Thr Ala  
 65 70 75 80  
 Phe Leu His Phe Gly Ile Asn Thr Phe Thr Gly Arg Glu Trp Gly Asp  
 85 90 95  
 Gly Lys Glu Asn Pro Ala Leu Phe Asn Pro Thr Asp Phe Asp Ala Glu  
 100 105 110  
 Gln Trp Val Arg Ser Leu Lys Glu Ala Gly Phe Lys Met Ala Ile Leu  
 115 120 125  
 Thr Ala Lys His His Asp Gly Phe Cys Leu Trp Pro Thr Lys Thr Thr  
 130 135 140  
 Gly His Ser Val Ala Ala Ser Pro Trp Lys Asp Gly Lys Gly Asp Val  
 145 150 155 160  
 Val Arg Glu Leu Arg Asp Ala Cys Asp Lys Tyr Gly Ile Lys Phe Gly  
 165 170 175  
 Val Tyr Leu Ser Pro Trp Asp Arg Asn Ala Ser Cys Tyr Gly Asp Ser  
 180 185 190  
 Pro Lys Tyr Asn Glu Phe Phe Ile Glu Gln Leu Thr Glu Leu Leu Thr  
 195 200 205  
 Asn Tyr Gly Glu Val His Glu Val Trp Phe Asp Gly Ala Asn Gly Glu  
 210 215 220  
 Gly Pro Asn Gly Lys Lys Gln Glu Tyr Asp Trp Thr Ala Ile Leu Ser  
 225 230 235 240  
 Thr Ile Arg Arg Leu Gln Pro Arg Ala Val Thr Ala Ile Met Gly Asp  
 245 250 255  
 Asp Val Arg Trp Val Gly Asn Glu Arg Gly Leu Gly Arg Glu Thr Glu  
 260 265 270  
 Trp Ser Ala Thr Val Leu Thr Pro Gly Thr Tyr Ala Arg Cys Glu Glu  
 275 280 285  
 Gln Asn Lys Ala Leu Gly Val Lys Ala Thr Ser Lys Asp Leu Gly Gly  
 290 295 300  
 Arg Asp Met Leu Val Asn Ala Lys Glu Leu Phe Trp Tyr Pro Ser Glu  
 305 310 315 320  
 Val Asp Val Ser Ile Arg Pro Gly Trp Phe Tyr His Gln Gln Glu Asp  
 325 330 335  
 Asn Gln Val Lys Ser Leu Lys His Leu Thr Asp Ile Tyr Phe Lys Ser  
 340 345 350  
 Val Gly Tyr Asn Ser Val Leu Leu Leu Asn Ile Pro Pro Asp Gln Arg  
 355 360 365  
 Gly Arg Ile Ser Asp Ala Asp Val Asn Arg Leu Lys Glu Phe Ala Asp  
 370 375 380

114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000



Tyr Arg Lys Glu Ile Phe Ala Asp Asn Arg Val Lys Gly Gly Leu Lys  
 385 390 395 400  
 Ala Trp Thr Ala Arg Pro Gly Asp Thr Arg Val Tyr Gln Leu Lys Pro  
 405 410 415  
 Lys Ser Glu Ile Asn Val Val Met Leu Arg Glu Asp Ile Ser Lys Gly  
 420 425 430  
 Gln Arg Met Glu Ala Phe Thr Val Glu Ala Leu Thr Ala Asp Gly Trp  
 435 440 445  
 Lys Glu Ile Ala Lys Gly Thr Thr Val Gly Tyr Lys Arg Leu Ile Arg  
 450 455 460  
 Ile Pro Ala Val Glu Ala Arg Gln Leu Arg Val Lys Val Asp Ala Cys  
 465 470 475 480  
 Arg Leu Ala Ala Asn Ile Ser Glu Val Ala Ala Tyr Tyr Ala Arg Pro  
 485 490 495  
 Leu Glu Glu Ser Ala Ala Lys Glu Asn Trp Asn Asp Leu Pro Arg Thr  
 500 505 510  
 Ala Trp Lys Gln Val Thr Ala Ala Pro Leu Val Ile Asp Leu Gly Lys  
 515 520 525  
 Ala Val Asp Met Thr Gly Phe Val Tyr Ala Pro Ala Asn Ala Glu Ala  
 530 535 540  
 Lys Pro Thr Met Ala Phe Arg Tyr Lys Phe Tyr Ile Ser Thr Asn Gly  
 545 550 555 560  
 Arg Asp Trp Lys Glu Val Pro Thr Thr Gly Glu Phe Ser Asn Ile Met  
 565 570 575  
 His Asn Pro Val Pro Gln Thr Val Ser Phe Gly Asn Lys Val Ser Ala  
 580 585 590  
 Arg Tyr Ile Lys Leu Asp Ala Thr Thr Pro Asp Thr Thr Pro Ala Arg  
 595 600 605  
 Val Asp Leu Lys Glu Ile Gly Ile Arg Leu Gln Lys  
 610 615 620

&lt;210&gt; 6510

&lt;211&gt; 322

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6510

Ser Pro Cys Leu Ser Tyr Leu Ser Asp Ile Leu Tyr Tyr Phe Ala Gly  
 1 5 10 15  
 Lys Ala Asn Lys Ile Gln Tyr Met Gly Ser His Trp Gly Glu Lys Ile  
 20 25 30  
 Arg Arg Tyr Leu Gln Ser Leu Tyr Pro Val Ala Tyr Gln Arg Trp Lys  
 35 40 45  
 Val Val Leu Ile Ser Ser Leu Val Val Phe Leu Ile Leu Leu Val Leu  
 50 55 60  
 Gln Pro Phe Gly Ile Ser Gly Ile Arg Gln His Lys Phe Trp Ile Leu  
 65 70 75 80  
 Val Gly Phe Met Gly Val Thr Ala Val Ser Leu Ser Ile Pro Met Tyr  
 85 90 95  
 Val Phe Gly Lys Leu Phe Pro Lys Phe Tyr Lys Glu Glu Thr Trp Thr  
 100 105 110  
 Val Trp Lys Gln Ile Val Asn Leu Leu Gln Ile Leu Phe Phe Ile Ala  
 115 120 125  
 Ile Gly Asn Trp Ile Tyr Ser Thr Leu Val Phe Gly Trp Gly Leu Arg  
 130 135 140  
 Trp Asp Val Phe Cys Ala Phe Ala Leu Phe Thr Leu Val Ile Gly Leu  
 145 150 155 160  
 Phe Pro Thr Val Leu Phe Ile Leu Leu Asn Gln Asn Arg Leu Leu Ala  
 165 170 175

Ile His Leu Lys Glu Ala Thr Glu Met Asn Leu His Leu Gln Arg Ser  
 180 185 190  
 Val Leu Leu Ala Glu Ser Val Glu Thr Thr Gln Asp Ser Pro Phe Leu  
 195 200 205  
 Leu Phe Gln Gly Gly Ile Arg Glu Ser Leu Glu Leu Asp Ser Lys Asp  
 210 215 220  
 Leu Leu Tyr Val Glu Ser Asn Gly Asn Tyr Ile Arg Val Asn Tyr Gln  
 225 230 235 240  
 Lys Ala Gly Lys Asn Val Gln Cys Leu Leu Arg Ala Thr Met Lys Gln  
 245 250 255  
 Ala Glu Glu Val Thr Ala Val Cys Pro Leu Val Leu Lys Cys His Arg  
 260 265 270  
 Ala Phe Leu Val Asn Val Arg Lys Val Val Lys Val Asn Gly Asn Ser  
 275 280 285  
 Gln Gly Tyr Arg Leu Leu Leu Glu Gly Cys Pro Glu Glu Ile Pro Val  
 290 295 300  
 Ser Arg Gly Tyr Ser Lys Gln Val Lys Glu Leu Ile Glu Gly Ile Ser  
 305 310 315 320  
 Gly Asp

<210> 6511  
 <211> 91  
 <212> PRT  
 <213> B.fragilis

<400> 6511  
 Ser Val Gln Lys Ser Ile Phe Ala Pro Thr Lys Leu Ile Glu Met Leu  
 1 5 10 15  
 Tyr Thr Ile Leu Ile Thr Leu Leu Ile Val Ala Ile Cys Leu Gly Leu  
 20 25 30  
 Leu Gly Ile Lys Val Phe Phe Thr Lys Gly Gly Lys Phe Pro Asn Gly  
 35 40 45  
 His Val Ser Gly Asn Lys Ala Leu Arg Glu Arg Gly Ile Ser Cys Ala  
 50 55 60  
 Gln Ser Gln Asp Arg Glu Ala Gln Lys Lys Arg Arg Phe Ser Ile Asp  
 65 70 75 80  
 Glu Ile Glu Lys Ala Leu Asn Asp Ser Met Asn  
 85 90

<210> 6512  
 <211> 209  
 <212> PRT  
 <213> B.fragilis

<400> 6512  
 Leu Ile Lys Lys Leu Tyr Phe Thr Ser Met Lys Arg Met Asn Tyr Leu  
 1 5 10 15  
 Ile Asn Gly Phe Ala Ala Leu Ala Phe Leu Phe Leu Phe Ser Gln Cys  
 20 25 30  
 Ala Gly Lys Ala Asp Asn Ala Ala Pro Ala Ala Ser Gly Asn Ala Asn  
 35 40 45  
 Gly Thr Ser Gly Leu Lys Ile Ala Tyr Val Glu Val Asp Thr Leu Leu  
 50 55 60  
 Ser Gln Tyr Asn Phe Cys Lys Asp Leu Asn Ala Asp Met Ile Ser Lys  
 65 70 75 80  
 Glu Glu Asn Ser Arg Met Val Leu Asn Gln Lys Ala Asn Glu Leu Arg  
 85 90 95  
 Lys Ser Gln Gln Glu Phe Gln Lys Lys Tyr Glu Ser Asn Ala Phe Ile

```
<210> 6513
<211> 288
<212> PRT
<213> B.fragilis
```

Gln 1	Ile	Ile	Glu	Ser 5	Ile	Leu	Leu	Ile	Tyr 10	Lys	Ser	Leu	Leu	Phe 15	Met
Met	Arg	Ile	Arg	Ile	Ile	Ile	Thr	Leu	Leu	Ile	Ala	Leu	Phe	Val	Glu
			20					25					30		
Ser	Arg	Gln	Glu	Ala	Phe	Gly	Gln	Thr	Val	Asp	Thr	Leu	Ser	Leu	Ser
			35				40					45			
Asp	Lys	Val	Ile	Arg	Thr	Ala	Ser	Phe	Ala	Thr	Gly	Phe	Arg	Gly	Glu
	50					55					60				
Val	Trp	Arg	Asn	Pro	Ala	Leu	Tyr	Tyr	Tyr	Tyr	Thr	Pro	Tyr	Thr	Trp
65					70					75					80
Thr	Arg	Leu	Asp	Val	Asn	Gly	Ala	Tyr	His	Asp	Lys	Gly	Lys	Ala	Ser
				85					90					95	
Leu	Lys	Gln	Glu	Gly	Asp	Lys	Asp	Thr	His	Ile	Gly	Val	Asp	Val	His
			100					105					110		
Ser	Phe	Val	Ile	Leu	Ser	Gly	Arg	Asp	Arg	Val	Phe	Gly	Ser	Ala	Gly
			115				120					125			
Tyr	Arg	Ser	Glu	Lys	Gln	Glu	Asn	Val	Leu	Trp	Asn	Glu	Asn	Ile	Asp
	130					135					140				
Trp	Lys	Leu	Ile	Ala	Pro	Tyr	Val	Thr	Gly	Asp	Ser	Ile	Gly	Gly	Phe
145				150						155				160	
Leu	Lys	Gly	Glu	Thr	Tyr	Tyr	Phe	Asn	Gly	Gly	Tyr	Ala	Ser	Glu	Ser
				165					170					175	
Gly	Ser	Trp	Thr	Trp	Gly	Ile	Thr	Gly	Gly	Tyr	Arg	Ala	Ser	His	Asn
			180					185					190		
Tyr	Arg	Asp	Lys	Asp	Pro	Arg	Pro	Arg	Asn	Thr	Ala	Ser	Asp	Leu	Ser
		195					200					205			
Phe	Ala	Leu	Gly	Ala	Gly	Tyr	Arg	Leu	Gly	Ala	Tyr	Arg	Leu	Gly	Val
	210					215					220				
Ser	Thr	Asp	Phe	Arg	Leu	Tyr	Gln	Gln	Lys	Ser	Glu	Ile	Ser	Phe	Leu
225					230					235				240	
Ala	Asp	Lys	Gly	Ser	Thr	Ser	Val	Tyr	His	Met	Leu	Gly	Leu	Gly	Met
				245					250					255	
Asp	Tyr	Val	Arg	Phe	Ala	Gly	Asn	Gln	Thr	Gly	Thr	Lys	His	Gln	Gly
			260					265					270		
Thr	Ser	Ser	Pro	Arg	Gly	Trp	Met	Gly	Ser	Ala	Leu	Cys	Thr	Leu	Ala
		275					280					285			

[illegible]

<210> 6514  
 <211> 356  
 <212> PRT  
 <213> B.fragilis

<400> 6514

Thr	Ser	Thr	Glu	Gln	His	Leu	Lys	Gly	Ile	Gln	Ser	Met	Leu	Arg	Leu
1			5					10					15		
Phe	Phe	Ile	Leu	Leu	Ile	Ser	Leu	Ser	Ser	Leu	Phe	Leu	Ser	Ala	Gln
		20						25				30			
Asn	Arg	Pro	Pro	Phe	Arg	Val	Val	Phe	Trp	Asn	Thr	Glu	Asn	Phe	Phe
		35					40					45			
Asp	Thr	Arg	His	Asp	Ser	Leu	Lys	Asn	Asp	Met	Glu	Phe	Leu	Pro	His
	50					55				60					
Ser	Met	Arg	His	Trp	Asn	His	Arg	Arg	Tyr	Lys	Lys	Lys	Leu	Asp	Asn
65					70					75				80	
Val	Ala	Arg	Thr	Leu	Thr	Ala	Ile	Gly	Glu	Trp	Asn	Phe	Pro	Ala	Leu
			85						90					95	
Ile	Gly	Leu	Cys	Glu	Val	Glu	Asn	Asp	Thr	Val	Met	Arg	Asp	Leu	Thr
		100						105					110		
Leu	Tyr	Ser	Pro	Leu	Lys	Glu	Ala	Gly	Tyr	Arg	Tyr	Val	Met	Thr	His
	115						120					125			
Cys	Ser	Asp	Leu	Arg	Gly	Ile	Asp	Val	Ala	Leu	Leu	Tyr	Gln	Arg	Asp
	130					135				140					
Arg	Phe	Lys	Leu	Leu	Ser	Tyr	Ser	Ala	Leu	Ser	Val	Gly	Asn	Phe	Lys
145					150					155					160
Gly	His	Arg	Pro	Thr	Arg	Asp	Ile	Leu	His	Val	Ser	Gly	Leu	Leu	Leu
			165						170					175	
Thr	Gly	Asp	Thr	Leu	Asp	Ile	Met	Val	Ala	His	Leu	Pro	Ser	Arg	Ser
		180						185					190		
Gly	Gly	Val	Arg	Gln	Ser	Glu	Pro	Tyr	Arg	Leu	Tyr	Ala	Ala	Gln	Lys
		195					200					205			
Leu	Lys	Asp	Ala	Ala	Asp	Ser	Leu	Ile	Asn	Val	Arg	Pro	Ser	Ala	Lys
	210					215					220				
Leu	Ile	Ile	Met	Gly	Asp	Phe	Asn	Asp	Tyr	Pro	Thr	Asp	Lys	Ser	Val
225					230					235					240
Val	Gln	Val	Leu	Gln	Ala	Leu	Ser	Pro	Glu	Val	Ser	Thr	His	His	Asp
			245						250					255	
Arg	Leu	Tyr	His	Leu	Leu	Ala	Arg	Lys	Ala	Lys	Asp	Arg	Asn	Phe	Gly
			260					265					270		
Ser	Tyr	Lys	Tyr	Gln	Gly	Glu	Trp	Gly	Leu	Leu	Asp	His	Leu	Ile	Val
		275					280					285			
Ser	Gly	Thr	Leu	Leu	Asp	Ile	Ser	Gly	Thr	Leu	Phe	Thr	Glu	Glu	Lys
	290					295					300				
Lys	Ala	Asn	Val	Ala	Arg	Leu	Pro	Phe	Leu	Leu	Thr	Lys	Asp	Glu	Lys
305					310						315				320
Tyr	Gly	Gly	Met	Gln	Pro	Phe	Arg	Thr	Tyr	Val	Gly	Met	Lys	Tyr	Gln
			325						330					335	
Glu	Gly	Tyr	Ser	Asp	His	Leu	Pro	Val	Tyr	Val	Asp	Phe	Glu	Thr	Asn
			340					345					350		
Gln	Ser	Glu	Tyr												
		355													

<210> 6515  
 <211> 408  
 <212> PRT  
 <213> B.fragilis

<400> 6515

Asn	Lys	Ile	Glu	Met	Lys	Met	Lys	Lys	Asn	Gln	Leu	Thr	Met	Ala	Ile
1				5					10					15	
Leu	Phe	Ala	Thr	Met	Leu	Gly	Phe	Thr	Ala	Cys	Ser	Asp	Asp	Asp	Lys
			20					25					30		
Val	Asn	Ile	Ser	Thr	Val	Ser	Ile	Thr	Thr	Thr	Val	Asp	Thr	Thr	Ile
		35					40					45			
Glu	Gly	Leu	Gln	Leu	Thr	Gly	Gly	Thr	Tyr	Thr	Phe	Glu	Asn	Ile	Asn
	50					55					60				
Thr	Ser	Val	Lys	Thr	Asp	Val	Ala	Tyr	Pro	Leu	Gln	Ser	Ile	Glu	Leu
65					70					75					80
Ala	Asp	Gly	Leu	Tyr	Asn	Val	Thr	Phe	Ile	Gly	Lys	Gly	Thr	Tyr	Ser
				85					90					95	
Gln	Asn	Gly	Thr	Ser	Val	Glu	Val	Asp	Val	Gln	Gly	Val	Gln	Gln	Asn
			100					105					110		
Val	Thr	Val	Ser	Gly	Gly	Ser	Cys	Lys	Leu	Glu	Leu	Thr	Val	His	Val
		115					120						125		
Leu	Asn	Thr	Gly	Glu	Pro	Gly	Phe	Val	Ile	Ala	Glu	Ile	Phe	Ile	Pro
	130					135					140				
Gly	Thr	Tyr	Asn	Glu	Ala	Gly	Lys	Gln	Tyr	Asn	Gly	Asp	Gln	Tyr	Val
145					150					155					160
Arg	Ile	Tyr	Asn	Asn	Ser	Asp	Lys	Val	Leu	Tyr	Ala	Asp	Gly	Leu	Ile
			165						170					175	
Phe	Met	Glu	Ser	Gln	Phe	Gln	Thr	Thr	Gln	Lys	Tyr	Gln	Ser	Val	Asp
		180					185						190		
Pro	Asp	Ile	Met	Asn	Glu	Ala	Ile	Ala	Val	Gly	Ser	Val	Val	Ala	Val
		195					200					205			
Pro	Gly	Ser	Gly	Thr	Asp	His	Pro	Val	Gln	Pro	Gly	Glu	Ser	Phe	Ile
	210					215					220				
Leu	Cys	Asp	Asn	Ala	Ile	Asn	His	Lys	Glu	Ala	Asn	Pro	Asn	Ser	Ile
225					230					235					240
Asp	Leu	Ser	Lys	Ala	Asn	Phe	Glu	Trp	Tyr	Ile	Glu	Ser	Lys	Gln	Asp
			245						250					255	
Val	Asp	Asn	Pro	Ala	Val	Pro	Asn	Leu	Asp	Ile	Tyr	Tyr	Cys	Tyr	Ser
		260					265						270		
Lys	Thr	Ile	Trp	Val	Leu	Asn	Lys	Gln	Gly	Asn	Arg	Ala	Tyr	Ala	Ile
		275					280						285		
Gly	Arg	Leu	Pro	Gln	Gly	Met	Thr	Lys	Glu	Lys	Tyr	Ile	Ser	Asp	Tyr
	290					295					300				
Ala	Tyr	Asn	Tyr	Thr	Tyr	Ile	Met	Gln	Asn	Gly	Thr	Ala	Ser	Lys	Pro
305					310					315					320
Gln	Ser	Lys	Tyr	Lys	Phe	Pro	Asn	Glu	Trp	Ile	Ile	Asp	Ala	Val	Asn
			325						330					335	
Val	Gly	Ala	Ser	Asn	Glu	Trp	Gln	Trp	Asn	Val	Thr	Ser	Thr	Gly	Leu
		340					345						350		
Asp	Met	Gly	His	Thr	Tyr	Val	Gly	Val	Asn	Asn	Thr	Ile	Ala	Glu	Asn
		355					360					365			
Ile	Gly	Lys	Cys	Val	Met	Arg	Lys	Val	Ala	Tyr	Lys	Asp	Gly	Glu	Arg
	370					375					380				
Glu	Val	Leu	Gln	Asp	Thr	Asn	Asn	Ser	Thr	Val	Asp	Phe	Thr	Pro	Ala
385					390					395					400
Ala	Thr	Pro	Ser	Leu	Phe	Asn	Lys								
				405											

&lt;210&gt; 6516

&lt;211&gt; 114

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6516

Val Ile Ser Phe Ile Phe Ala Thr Gly Ile Asn Glu Lys Ile Met Gly  
 1 5 10 15  
 Lys Leu Ile Thr Ile Trp Glu Phe Ile Gly Arg His Lys Tyr Trp Ile  
 20 25 30  
 Thr Val Val Ala Phe Gly Val Ile Ile Gly Phe Leu Asp Glu Asn Ser  
 35 40 45  
 Met Ile Arg Arg Ile Gly Tyr Ala Arg Glu Ile Ser Arg Leu Gln Gly  
 50 55 60  
 Glu Ile Asp Lys Tyr Arg Ala Glu Tyr Glu Glu Asn Thr Glu Arg Leu  
 65 70 75 80  
 Asn Glu Leu Ser Thr Asn Pro Glu Ala Ile Glu Gln Ile Ala Arg Glu  
 85 90 95  
 Lys Tyr Leu Met Lys Lys Pro Asn Glu Asp Ile Tyr Val Phe Asp Glu  
 100 105 110  
 Glu Glu

<210> 6517  
 <211> 939  
 <212> PRT  
 <213> B.fragilis

<400> 6517  
 Ile Asp Thr Leu Leu Tyr Leu Ile Phe Gly Ile Ala Ser Ala Ala Asp  
 1 5 10 15  
 Ile Leu Tyr Phe Cys Glu Leu Ile Glu Ser Lys Met Ile Arg Lys Ile  
 20 25 30  
 Ala Tyr Thr Phe Phe Ser Phe Leu Ile Cys Cys Asn Val Ser Leu Ala  
 35 40 45  
 Trp Gly Gln Thr Phe Ala Phe Arg Gly Thr Val Leu Asp Glu Gln Thr  
 50 55 60  
 His Lys Ala Leu Asp Tyr Ala Thr Ile Gln Leu Phe Val Glu Lys Gln  
 65 70 75 80  
 Phe Ala Tyr Gly Gly Ile Thr Asp Ala Asn Gly His Phe Glu Leu Leu  
 85 90 95  
 His Ile His Pro Gly Thr Tyr Arg Ile Ile Ile Ser Tyr Leu Gly Tyr  
 100 105 110  
 Asp Ser Thr Glu Lys Glu Ile Lys Val Val Gly Asn Thr Ser Asp Ile  
 115 120 125  
 Phe Tyr Leu Lys Pro Ser Asn Met Ala Leu Asn Glu Val Val Val Thr  
 130 135 140  
 Ala Ser Glu Ser Lys Arg Ala Thr Ser Ala Ser Ile Val Asp Arg Thr  
 145 150 155 160  
 Ala Met Lys His Leu Gln Pro Ser Ser Phe Ser Asp Leu Met Glu Leu  
 165 170 175  
 Val Pro Gly Gly Lys Ser Ala Asp Pro Gln Met Gly Gln Ala Asn Leu  
 180 185 190  
 Ile Arg Ile Arg Glu Thr Gly Lys Thr Glu Asp Ile Ser Ser Leu Gly  
 195 200 205  
 Val Gly Phe Tyr Ile Asp Gly Ile Phe Gln Asn Thr Asp Ala Asn Leu  
 210 215 220  
 Gln Tyr Met Pro Ser Ser Thr Ser Ala Val Asn Ala Thr Ser Thr Met  
 225 230 235 240  
 Ser Lys Gly Val Asp Met Arg Thr Ile Pro Thr Asp Asn Ile Glu Lys  
 245 250 255  
 Val Glu Ile Ile Arg Gly Ile Pro Ser Val Ala Tyr Gly Asn Val Ala  
 260 265 270  
 Asn Gly Ala Val Ile Ile Gln Arg Lys Thr Ser Glu Ser Pro Leu Ser  
 275 280 285

[illegible]

755	760	765
Ser Asp Ser Pro Lys Tyr	Lys Ala Ser Ser Ile	Leu Leu Asp Asn Lys
770	775	780
Gln Leu Lys Tyr Val Gly	Leu Tyr Gln Gly Glu	Asn Gly Thr Glu Ser
785	790	795
Gln Ala Phe Asn Thr Asn	Phe Met Phe Asp Thr	Tyr Ile Gln Arg Leu
805	810	815
Gly Leu Thr Phe Ser Thr	Ser Ala Gln Cys Thr	Trp Tyr Thr Asn Arg
820	825	830
Arg Asn Leu Trp Asn Asn	Gly Val Pro Val Ser	Tyr Ile Asp Gln Ser
835	840	845
Gly Glu Thr His Leu Phe	Arg Glu Glu Asp Lys	Asn Asn Ile Gln Leu
850	855	860
Gln His Leu Val Glu Lys	Tyr Ser Ala Thr Tyr	Phe Glu Arg Thr Thr
865	870	875
Val Pro Phe Tyr Met Asp	Ile Asn Leu Lys Ala	Ser Lys Arg Ile Gly
885	890	895
Lys Tyr Leu Asn Leu Ala	Phe Tyr Val Asn Arg	Leu Leu Gly Ile Tyr
900	905	910
Pro Asp Tyr Thr Leu Arg	Gly Val Leu Gln Arg	Arg Thr Ser Glu Ser
915	920	925
Pro Tyr Phe Gly Met Glu	Met Asn Leu Thr Phe	
930	935	

<210> 6518  
 <211> 566  
 <212> PRT  
 <213> B.fragilis

<400> 6518

Gln His Thr Trp Ile Val	His Ile Ala Cys Met	Asn Val Arg Lys Ile
1	5	10
Ile Leu Pro Ser Leu Ser	Gly His Trp Ala Thr	Lys Pro Gly Asn Gly
20	25	30
Ile Asn Phe Glu Arg Thr	Tyr Asp Trp Leu Lys	Ser Val Glu Lys Ser
35	40	45
Arg Pro Val Gln Tyr Glu	Arg Ala Glu Gln Asn	Tyr Asn Thr Asp Ile
50	55	60
Tyr Cys Arg Met Tyr Arg	Ser Val Asp Glu Ile	Lys Ala Tyr Leu Ala
65	70	75
Gln Lys Asp Ile Tyr Arg	Pro Phe Ile Leu Cys	Glu Tyr Val His Ala
85	90	95
Met Gly Asn Ser Val Gly	Gly Leu Lys Glu Tyr	Trp Asp Val Phe Glu
100	105	110
Asn Asn Pro Met Ala Gln	Gly Gly Cys Val Trp	Asp Trp Val Asp Gln
115	120	125
Ser Phe Arg Glu Ile Asp	Ser Asn Gly Arg Trp	Tyr Trp Ser Tyr Gly
130	135	140
Gly Asp Tyr Gly Pro Lys	Gly Ile Pro Ser Phe	Gly Asn Phe Cys Cys
145	150	155
Asn Gly Leu Val Ser Ala	Asp Arg Val Pro His	Pro His Leu Leu Glu
165	170	175
Val Lys Lys Ile Tyr Gln	Asn Ile Lys Cys Thr	Leu Ile Asn Lys Asn
180	185	190
Asn Leu Thr Val Arg Val	Lys Asn Trp Phe Asp	Phe Ser Asn Leu Asn
195	200	205
Glu Tyr Ile Leu His Trp	Gln Val Val Gly Asp	Asn Gly Lys Leu Leu
210	215	220
Ala Glu Gly Asn Lys Glu	Val Asn Cys Ala Pro	His Ala Thr Ala Asp



225 230 235 240  
 Val Thr Leu Gly Lys Val Ala Leu Pro Ala Asn Val Arg Glu Gly Tyr  
 245 250 255  
 Leu Asn Leu Ser Trp Thr Arg Lys Glu Ala Ser Pro Met Val Gly Thr  
 260 265 270  
 Asp Trp Glu Val Ala Tyr Asp Gln Phe Val Leu Pro Gly Thr Lys Gly  
 275 280 285  
 Ser Thr Ala Tyr Leu Pro Ala Lys Ala Gly Gln Thr Ala Phe Thr Val  
 290 295 300  
 Asp Lys Glu Thr Gly Ala Leu Asn Ser Leu Thr Leu Asp Gly Gln Glu  
 305 310 315 320  
 Leu Leu Ala Thr Pro Val Thr Leu Ser Leu Phe Arg Pro Ala Thr Asp  
 325 330 335  
 Asn Asp Asn Arg Asp Arg Asn Gly Ala Tyr Leu Trp Arg Lys Ala Gly  
 340 345 350  
 Leu Asn Gln Leu Thr Gln Lys Val Val Ser Leu Lys Asp Gly Lys Lys  
 355 360 365  
 Ala Ala Thr Ala Lys Val Glu Ile Leu Asn Ala Lys Gly Met Lys Val  
 370 375 380  
 Gly Asp Ala Asp Phe Ala Tyr Ser Leu Asn Ser Ala Gly Ala Leu Lys  
 385 390 395 400  
 Thr Lys Val Thr Phe Arg Pro Asp Thr Ala Val Val Lys Ser Met Ala  
 405 410 415  
 Arg Leu Gly Leu Thr Phe Glu Met Asn Asp Thr Tyr Gly Asn Val Ala  
 420 425 430  
 Tyr Leu Gly Arg Gly Asp Asn Glu Thr Tyr Ser Asp Arg Met Gln Ser  
 435 440 445  
 Gly Lys Ile Ala Leu Tyr Gln Thr Thr Ala Glu Arg Met Phe His Tyr  
 450 455 460  
 Tyr Val Thr Pro Gln Ser Thr Gly Asn Arg Thr Asp Val Arg Trp Met  
 465 470 475 480  
 Lys Leu Thr Asp Glu Thr Gly Gln Gly Ile Phe Val Asp Ser Asn Arg  
 485 490 495  
 Pro Phe Gln Phe Ser Val Ile Pro Phe Ala Asp Asp Val Leu Glu Lys  
 500 505 510  
 Ala Arg His Ile Asn Asp Leu Glu Arg Asn Gly His Val Thr Val His  
 515 520 525  
 Leu Asp Ala Glu Gln Ala Gly Val Gly Thr Ala Thr Cys Gly Pro Gly  
 530 535 540  
 Val Gln Pro Gln Tyr Arg Val Pro Val Thr Glu Gln Ser Phe Glu Phe  
 545 550 555 560  
 Thr Leu Arg Thr Val Lys  
 565

&lt;210&gt; 6519

&lt;211&gt; 641

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6519

Asn Leu Phe Arg Phe Leu Phe Tyr Pro Cys Thr Phe Leu Arg Thr Phe  
 1 5 10 15  
 Ala Gln Thr Gln Lys Ile Glu Ile Ile Arg Asn Met Glu Asn Tyr Ile  
 20 25 30  
 Val Ser Ala Arg Lys Tyr Arg Pro Ser Thr Phe Glu Ser Val Val Gly  
 35 40 45  
 Gln Arg Ala Leu Thr Thr Thr Leu Lys Asn Ala Ile Ala Thr Gln Lys  
 50 55 60  
 Leu Ala His Ala Tyr Leu Phe Cys Gly Pro Arg Gly Val Gly Lys Thr

65					70					75				80
Thr	Cys	Ala	Arg	Ile	Phe	Ala	Lys	Thr	Ile	Asn	Cys	Met	Asn	Leu
				85					90					95
Ala	Asp	Gly	Glu	Ala	Cys	Asn	Glu	Cys	Glu	Ser	Cys	Val	Ala	Phe
			100					105					110	Asn
Glu	Gln	Arg	Ser	Tyr	Asn	Ile	His	Glu	Leu	Asp	Ala	Ala	Ser	Asn
		115					120					125		Asn
Ser	Val	Asp	Asp	Ile	Arg	Gln	Leu	Val	Glu	Gln	Val	Arg	Ile	Pro
	130					135					140			Pro
Gln	Ile	Gly	Lys	Tyr	Lys	Val	Tyr	Ile	Ile	Asp	Glu	Val	His	Met
145					150					155				160
Ser	Ala	Ser	Ala	Phe	Asn	Ala	Phe	Leu	Lys	Thr	Leu	Glu	Glu	Pro
				165					170					175
Arg	His	Ala	Ile	Phe	Ile	Leu	Ala	Thr	Thr	Glu	Lys	His	Lys	Ile
		180						185					190	Leu
Pro	Thr	Ile	Leu	Ser	Arg	Cys	Gln	Ile	Tyr	Asp	Phe	Asn	Arg	Ile
	195					200					205			Ser
Val	Asp	Asp	Thr	Val	Asn	His	Leu	Thr	Tyr	Val	Ala	Ser	Lys	Glu
210					215					220				Gly
Ile	Thr	Ala	Glu	Pro	Glu	Ala	Leu	Asn	Val	Ile	Ala	Leu	Lys	Ala
225					230					235				Asp
Gly	Gly	Met	Arg	Asp	Ala	Leu	Ser	Ile	Phe	Asp	Gln	Val	Val	Ser
				245					250					Phe
Thr	Gly	Gly	Asn	Ile	Thr	Tyr	Lys	Ser	Val	Ile	Glu	Asn	Leu	Asn
			260					265					270	Val
Leu	Asp	Tyr	Glu	Tyr	Tyr	Phe	Arg	Leu	Thr	Asp	Cys	Phe	Leu	Glu
	275					280						285		Asn
Lys	Val	Ser	Asp	Ala	Leu	Leu	Leu	Phe	Asn	Asp	Val	Leu	Asn	Lys
	290					295				300				Gly
Phe	Asp	Gly	Ser	His	Phe	Ile	Thr	Gly	Leu	Ser	Ser	His	Phe	Arg
305					310				315					Asp
Leu	Leu	Val	Ser	Lys	Asp	Ala	Ala	Thr	Leu	Gln	Leu	Leu	Glu	Val
				325					330					Gly
Ala	Gly	Ile	Arg	Gln	Arg	Tyr	Gln	Glu	Gln	Ala	Gln	Lys	Cys	Ala
			340					345					350	Leu
Pro	Phe	Leu	Tyr	Arg	Ala	Met	Lys	Leu	Cys	Asn	Asp	Cys	Asp	Met
	355					360					365			Asn
Tyr	Arg	Ala	Ser	Lys	Asn	Lys	Arg	Leu	Leu	Val	Glu	Leu	Thr	Leu
	370					375					380			Ile
Gln	Val	Ala	Gln	Leu	Thr	Val	Glu	Gly	Asp	Asp	Gly	Ser	Gly	Gly
385					390				395					Arg
Gly	Pro	Lys	Gln	Ala	Ile	Lys	Pro	Val	Phe	Thr	Gln	Pro	Ala	Ala
			405						410					Ala
Gln	Gln	Pro	Gln	Val	Ala	Pro	Ile	Ala	Ser	Pro	Ser	Gln	Ser	Met
			420					425					430	Asn
Ala	Ala	Thr	Pro	Val	Ala	Pro	Gln	Ala	Val	Ser	Gln	Gln	Val	Gly
		435					440					445		Ser
Ser	Pro	Ala	Val	Asn	Val	Arg	Pro	Gly	Gly	Ala	Ile	Ser	Pro	Ser
	450				455					460				Gly
Ala	Met	Pro	Asp	Ala	Val	Arg	Met	Ala	Gln	Phe	Lys	Glu	Glu	Lys
465					470				475					Lys
Ile	Pro	Val	Met	Lys	Lys	Ser	Ser	Leu	Gly	Leu	Ser	Ile	Lys	His
				485					490					Pro
Gln	Lys	Glu	Glu	Gln	Arg	Gly	Ala	Gly	Val	Val	His	Thr	Ala	Gln
		500					505					510		
Met	Ser	Thr	Gln	Gln	Ile	Glu	Glu	Asp	Phe	Ile	Phe	Asn	Glu	Arg
		515				520					525			Asp
Leu	Asn	Tyr	Tyr	Trp	Gln	Glu	Tyr	Ala	Gly	Arg	Met	Pro	Ile	Glu
	530					535					540			Gln

Lys Ala Ile Ala Met Arg Met Gln Asn Met Arg Leu Ser Leu Leu Asn  
 545 550 555 560  
 Asp Thr Thr Phe Glu Val Val Val Asp Asn Glu Ile Val Ala Lys Asp  
 565 570 575  
 Phe Thr Ala Leu Ile Pro Gly Ile Gln Ala Tyr Leu Arg Gly Ser Leu  
 580 585 590  
 Lys Asn Arg Lys Val Thr Met Thr Val Arg Val Ser Glu Ala Thr Glu  
 595 600 605  
 Asn Val Arg Ala Val Ser Arg Val Glu Lys Phe Gln Met Met Ala Gln  
 610 615 620  
 Lys Asn Asn Ala Leu Leu Gln Leu Lys Glu Glu Phe Gly Leu Glu Leu  
 625 630 635 640  
 Tyr

<210> 6520

<211> 492

<212> PRT

<213> B.fragilis

<400> 6520

Lys Glu Lys Arg Met Glu Lys Ser Glu Leu Lys Pro Ala Gly Val Phe  
 1 5 10 15  
 His Phe Phe Asn Glu Ile Cys Gln Val Pro Arg Pro Ser Lys Lys Glu  
 20 25 30  
 Glu Lys Met Ile Ala Tyr Leu Lys Ala Phe Gly Glu Lys His Asn Leu  
 35 40 45  
 Glu Thr Lys Val Asp Glu Ala Gly Asn Val Leu Ile Lys Lys Pro Ala  
 50 55 60  
 Thr Pro Gly Lys Glu Asn Leu Lys Thr Val Ile Leu Gln Ser His Val  
 65 70 75 80  
 Asp Met Val Cys Glu Lys Asn Asn Asp Thr Asp His Asp Phe Leu Thr  
 85 90 95  
 Asp Pro Ile Glu Thr Glu Ile Asp Gly Glu Trp Met Lys Ala Lys Gly  
 100 105 110  
 Thr Thr Leu Gly Ala Asp Asn Gly Ile Gly Val Ala Thr Glu Leu Ala  
 115 120 125  
 Ile Leu Ala Asp Asp Ser Ile Glu His Gly Pro Ile Glu Cys Leu Phe  
 130 135 140  
 Thr Val Asp Glu Glu Thr Gly Leu Thr Gly Ala Phe Ala Leu Lys Glu  
 145 150 155 160  
 Gly Phe Met Ser Gly Glu Ile Leu Leu Asn Leu Asp Ser Glu Asp Glu  
 165 170 175  
 Gly Glu Leu Tyr Ile Gly Cys Ala Gly Gly Ile Asp Thr Val Ala Glu  
 180 185 190  
 Phe Gln Tyr Glu Asn Glu Met Thr Pro Ile Ser His Leu Cys Phe Arg  
 195 200 205  
 Ile Thr Val Lys Gly Leu Lys Gly Gly His Ser Gly Gly Asp Ile His  
 210 215 220  
 Leu Gly Arg Gly Asn Ala Asn Lys Ile Leu Asn Arg Phe Leu Tyr Gln  
 225 230 235 240  
 Met Met Thr Thr Tyr Gln Glu Asp Phe His Leu Tyr Glu Phe Asn Gly  
 245 250 255  
 Gly Asn Leu Arg Asn Ala Ile Pro Arg Glu Ala Ser Ala Val Phe Ser  
 260 265 270  
 Val Pro Glu His Tyr Lys His Asp Ile Arg Thr Ala Leu Asn Val Phe  
 275 280 285  
 Thr Ala Glu Ile Glu Asn Glu Leu His Arg Val Glu Pro Asp Leu Asn  
 290 295 300

Ile Leu Leu Glu Thr Glu Pro His Arg Asp Trp Ser Ile Asp Ser Ser  
 305 310 315 320  
 Thr Ser Tyr Arg Leu Ile Thr Ser Leu Tyr Gly Cys Pro His Gly Val  
 325 330 335  
 Tyr Ala Met Ser Gln Asp Ile Pro Gly Leu Val Glu Thr Ser Thr Asn  
 340 345 350  
 Leu Ala Ser Val Lys Met Lys Pro Glu Asn Thr Ile Arg Ile Glu Thr  
 355 360 365  
 Ser Gln Arg Ser Ser Ile Leu Ser Ser Arg Asp Asp Ile Ala Thr Thr  
 370 375 380  
 Val Arg Ala Val Phe Arg Leu Ala Gly Ala Gln Val Asn Trp Gly Glu  
 385 390 395 400  
 Gly Tyr Pro Gly Trp Lys Pro Asn Pro Asp Ser Glu Ile Leu Lys Val  
 405 410 415  
 Ala Glu Glu Ser Tyr Lys Arg Leu Phe Gly Val Asp Ala Lys Val Lys  
 420 425 430  
 Ala Ile His Ala Gly Leu Glu Cys Gly Leu Phe Leu Asp Lys Tyr Pro  
 435 440 445  
 Ala Leu Asp Met Ile Ser Phe Gly Pro Thr Leu Thr Gly Val His Ser  
 450 455 460  
 Pro Asp Glu Arg Met His Ile Pro Ser Val Asp Lys Phe Trp Lys His  
 465 470 475 480  
 Leu Leu Asp Val Leu Ala His Ile Pro Ala Lys Asn  
 485 490

<210> 6521  
 <211> 222  
 <212> PRT  
 <213> B.fragilis

<400> 6521  
 Thr Leu Val Gly Met Lys Phe Phe Ile Asp Thr Ala Asn Leu Asp Gln  
 1 5 10 15  
 Ile Arg Glu Ala His Asp Leu Gly Val Leu Asp Gly Val Thr Thr Asn  
 20 25 30  
 Pro Ser Leu Met Ala Lys Glu Gly Ile Lys Gly Val Glu Asn Gln Arg  
 35 40 45  
 Arg His Tyr Val Glu Ile Cys Asn Ile Val Gln Gly Asp Val Ser Ala  
 50 55 60  
 Glu Val Ile Ala Thr Asp Tyr Glu Gly Met Val Arg Glu Gly Lys Glu  
 65 70 75 80  
 Leu Ala Ala Leu Asn Pro His Ile Val Val Lys Val Pro Cys Ile Ala  
 85 90 95  
 Asp Gly Ile Lys Ala Ile Lys His Phe Ser Gly Lys Gly Ile Arg Thr  
 100 105 110  
 Asn Cys Thr Leu Val Phe Ser Thr Gly Gln Ala Leu Leu Ala Ala Lys  
 115 120 125  
 Ala Gly Ala Thr Tyr Val Ser Pro Phe Val Gly Arg Leu Asp Asp Ile  
 130 135 140  
 Cys Glu Asp Gly Val Gly Leu Val Ala Asn Ile Val Arg Met Tyr Arg  
 145 150 155 160  
 Phe Tyr Asn Tyr Pro Thr Gln Val Leu Ala Ala Ser Ile Arg Ser Ser  
 165 170 175  
 Lys His Ile Met Glu Cys Val Glu Ala Gly Ala Asp Val Ala Thr Cys  
 180 185 190  
 Pro Leu Ser Ala Ile Lys Gly Leu Met Asn His Pro Leu Thr Asp Ala  
 195 200 205  
 Gly Leu Lys Lys Phe Leu Glu Asp Tyr Lys Lys Val Asn Glu  
 210 215 220

<210> 6522  
 <211> 332  
 <212> PRT  
 <213> B.fragilis

<400> 6522

Ser	Lys	Asn	Ile	Ile	Asp	Met	Lys	Ala	Ile	Cys	Asn	Lys	Gly	Ile	Cys
1			5						10					15	
Val	Phe	Leu	Phe	Leu	Ser	Leu	Leu	Met	Ser	Ala	Thr	Met	Val	Asn	Ala
			20					25					30		
Gln	Arg	Val	Ile	Thr	Ala	Ser	Gly	Lys	Tyr	Ile	Thr	Lys	Asn	Ile	Lys
		35					40					45			
Val	Thr	Arg	Phe	Asp	Gln	Ile	Tyr	Leu	Lys	Gly	Ser	Pro	Thr	Ile	Glu
	50					55					60				
Tyr	Thr	Gln	Ser	Pro	Gly	Ala	Ser	Glu	Val	Gln	Ile	Ala	Gly	Ser	Asp
65					70					75					80
Asn	Leu	Val	Asp	Leu	Val	Glu	Cys	Arg	Val	Glu	Gly	Ser	Thr	Leu	Ile
			85						90					95	
Val	Asn	Met	Lys	Ser	Arg	Thr	Asn	Ile	Ser	Tyr	Gly	Lys	Glu	Gly	Arg
			100					105					110		
Leu	Lys	Ile	Leu	Val	Ser	Ser	Pro	Met	Leu	Lys	Ser	Ala	Ser	Leu	Gln
		115					120					125			
Gly	Ser	Gly	Asp	Ile	His	Leu	Gly	Ser	Leu	Lys	Val	Glu	Gly	Leu	Asp
	130					135					140				
Val	Ser	Leu	Ile	Gly	Ser	Gly	Asp	Ile	Val	Ala	Glu	Asn	Ile	Thr	Cys
145					150					155					160
Asn	Gly	Asp	Phe	Ser	Ala	Leu	Leu	Gln	Gly	Ser	Gly	Asp	Ile	Asp	Val
			165						170					175	
Lys	Gly	Gln	Leu	Arg	Ala	Lys	Ser	Val	Asn	Leu	Asn	Leu	Gln	Gly	Ser
			180					185					190		
Gly	Asp	Leu	Lys	Val	Ala	Gly	Val	Thr	Gly	Ser	Glu	Ile	Ser	Ala	Met
		195					200					205			
Leu	Gln	Gly	Ser	Gly	Asp	Leu	Lys	Val	Gly	Ser	Thr	Asn	Ile	Thr	Ser
	210					215						220			
Thr	Val	Thr	Ala	Lys	Leu	Ser	Gly	Ser	Gly	Asp	Met	Asp	Val	Leu	Asp
225					230					235					240
Ile	Arg	Ala	Asn	Ser	Val	Ser	Gly	Gln	Leu	Asp	Gly	Ser	Gly	Asp	Met
			245						250					255	
Thr	Leu	Ser	Gly	Ser	Ala	Cys	Asn	Ala	Thr	Leu	Val	Leu	Asn	Arg	Ser
		260						265					270		
Gly	Glu	Leu	Ser	Ala	Arg	Lys	Leu	Asp	Ala	Glu	Asn	Val	Thr	Ala	His
		275					280					285			
Val	Asn	Gly	Ser	Gly	Glu	Ile	Ser	Cys	Thr	Ala	Thr	Lys	Thr	Leu	Glu
	290					295					300				
Thr	Asn	Ile	Gln	Gly	Ser	Gly	Glu	Ile	Ser	Tyr	Lys	Gly	Asn	Pro	Ser
305					310					315					320
Ile	Arg	Ser	Thr	Gly	Lys	Asn	His	Leu	Asn	Arg	Leu				
			325						330						

<210> 6523  
 <211> 502  
 <212> PRT  
 <213> B.fragilis

<400> 6523

Leu	Thr	Val	Leu	Lys	Trp	Ser	Gly	Ser	Phe	Gln	Pro	Arg	Gly	Glu	Asp
1			5						10					15	
Tyr	Glu	Gln	Ser	Pro	Tyr	Tyr	Leu	Asn	Leu	Asn	Gly	Lys	Trp	Lys	Phe

	20		25		30
His Trp Val Lys Asn Pro Asp Leu Arg Pro Lys Asp Phe Tyr Lys Pro					
35		40		45	
Ser Phe Tyr Thr Gly Gly Trp Ala Asp Ile Asn Val Pro Gly Asn Trp					
50		55		60	
Glu Arg Gln Gly Tyr Gly Thr Ala Ile Tyr Val Asn Glu Thr Tyr Glu					
65		70		75	80
Phe Asp Asp Lys Met Phe Asn Phe Lys Lys Asn Pro Pro Leu Val Pro					
85		90		95	
Tyr Lys Glu Asn Glu Val Gly Ser Tyr Arg Arg Thr Phe Thr Val Pro					
100		105		110	
Ala Gly Trp Lys Gly Arg Arg Val Val Leu Cys Cys Glu Gly Val Ile					
115		120		125	
Ser Phe Tyr Tyr Val Trp Val Asn Gly His Phe Leu Gly Tyr Asn Gln					
130		135		140	
Gly Ser Lys Thr Ala Ala Glu Trp Asp Ile Thr Asp Gln Leu Glu Glu					
145		150		155	160
Gly Glu Asn Thr Ile Ala Leu Glu Val Tyr Arg Trp Ser Ser Gly Ser					
165		170		175	
Tyr Leu Glu Cys Gln Asp Met Trp Arg Leu Ser Gly Ile Glu Arg Asp					
180		185		190	
Val Tyr Leu Tyr Ser Thr Pro Lys Gln Tyr Ile Ala Asp Tyr Lys Val					
195		200		205	
Asn Ala Thr Leu Glu Lys Glu Arg Tyr Lys Asp Gly Ile Phe Gly Leu					
210		215		220	
Asp Val Thr Val Gly Gly Pro Ala Asp Gly Val Ala Ser Val Ser Tyr					
225		230		235	240
Thr Leu Asn Asp Pro Leu Gly Arg Pro Val Leu Ser Gly Glu Met Pro					
245		250		255	
Val Lys Ser Arg Gly Leu Ser Asn Phe Ile Thr Phe Gly Glu Gln Arg					
260		265		270	
Leu Lys Asp Val Lys Arg Trp Asn Ala Glu His Pro Asn Leu Tyr Thr					
275		280		285	
Leu Val Leu Glu Leu Lys Asn Ala Gly Gly Gln Val Thr Glu Val Thr					
290		295		300	
Gly Cys Glu Val Gly Phe Arg Thr Ser Glu Ile Lys Asp Gly Arg Phe					
305		310		315	320
Cys Ile Asn Gly Val Pro Val Leu Val Lys Gly Thr Asn Arg His Glu					
325		330		335	
His Ser Gln Leu Gly Arg Thr Val Ser Lys Glu Leu Met Glu Gln Asp					
340		345		350	
Ile Arg Leu Met Lys Leu Tyr Asn Ile Asn Thr Val Arg Asn Ser His					
355		360		365	
Tyr Pro Thr Asp Pro Tyr Trp Tyr Arg Leu Cys Asp Arg Tyr Gly Leu					
370		375		380	
Tyr Met Ile Asp Glu Ala Asn Ile Glu Ser His Gly Met Gly Tyr Gly					
385		390		395	400
Pro Ala Ser Leu Ala Lys Asp Ser Thr Trp Leu Thr Ala His Met Asp					
405		410		415	
Arg Thr His Arg Met Tyr Glu Arg Ser Lys Asn His Pro Ala Ile Val					
420		425		430	
Ile Trp Ser Leu Gly Asn Glu Ala Arg Lys Arg Asn Gln Phe Arg Ala					
435		440		445	
Tyr Leu Arg Leu Ala Glu Ile Gly Arg Glu Lys Pro Ser Arg Pro Val					
450		455		460	
Arg Thr Cys Arg Ala Glu Leu Gln Tyr Arg Tyr Leu Leu Ser Asn Val					
465		470		475	480
Ser Gln Cys Arg Arg Asn Gln Gly Leu Ser Gly Pro Glu Arg Tyr Leu					
485		490		495	

Pro Ser Val His Ser Leu  
500

<210> 6524  
<211> 117  
<212> PRT  
<213> B.fragilis

<400> 6524  
Arg Gly Arg Met Lys Gln Leu Ile Pro Ala Leu Phe Ala Val Gly Ala  
1 5 10 15  
Val Met Ala Leu Ile Gly Ala Ala Val Phe Ile Thr Gly Trp Val Tyr  
20 25 30  
Ala Pro Tyr Ile Tyr Thr Ile Gly Ala Gly Phe Val Ala Leu Ala Gln  
35 40 45  
Val Asn Thr Pro Leu Arg Ala Lys Ser Lys Thr Leu Arg Arg Leu Arg  
50 55 60  
Ile Gln Gln Ile Phe Gly Ala Leu Ala Leu Ile Leu Thr Gly Ala Phe  
65 70 75 80  
Met Phe Thr Thr Arg Gly Asn Glu Trp Ile Ala Cys Leu Thr Ile Ala  
85 90 95  
Ala Ile Leu Glu Leu Tyr Thr Ala Phe Arg Ile Pro Gln Glu Glu Glu  
100 105 110  
Lys Glu Leu Ser Lys  
115

<210> 6525  
<211> 355  
<212> PRT  
<213> B.fragilis

<220>  
<221> UNSURE  
<222> (77)  
<223> Identity of amino acid sequences at the above locations are unknown.

<400> 6525  
Ala Phe Arg Thr Trp Trp Pro Phe Ile Arg Met Lys Arg Glu Ser Val  
1 5 10 15  
Leu Phe Gln Ala Ala Arg Lys His His Leu Asn Leu Leu Phe Pro Leu  
20 25 30  
Phe Arg Ala Asn Thr Ser Ala Ser Tyr Pro Val Ser Arg Phe Ile Ser  
35 40 45  
Arg Pro Ile Thr Val Leu Ser Lys Gly Phe Ala Lys Gly Phe Phe Cys  
50 55 60  
Ile Lys Lys Glu Thr Val Asp Lys Ile Gln Gln Phe Xaa Phe Asp Lys  
65 70 75 80  
Trp Ala Ile Glu Glu Arg Arg Tyr His Gln Leu Leu Ser Ile Leu Leu  
85 90 95  
Pro Gly Leu Lys Asn Gly Asn Leu Ala Ser Val Glu Gln Tyr Leu Gly  
100 105 110  
Ala Lys His Ile Glu Ala Tyr Ala Ala Val Pro Tyr Val Ala Asp Arg  
115 120 125  
Trp Glu Leu Asp Asp Ala Ser Leu Pro Gln Gly Ala Val Val Val Leu  
130 135 140  
Thr Cys Glu Gly Val Leu Tyr Ser Trp Glu Thr Tyr Arg Leu Glu Arg  
145 150 155 160  
Tyr Ile Ser Ala Ala Ile Ala Asn Asp Arg Ile Ser Gly Val Val Leu  
165 170 175

Phe Val Asn Gly Pro Gly Gly Met Ile Thr Arg Val Asp Val Leu Glu  
 180 185 190  
 Lys Leu Ile Arg Gln Ser Pro Lys Pro Ile Val Ala Tyr Ile Thr Gly  
 195 200 205  
 Val Cys Ala Ser Ala His Phe Trp Phe Val Ser Ala Cys Ala Arg Arg  
 210 215 220  
 Phe Val Ser Ser Pro Met Asp Glu Ile Gly Ser Cys Gly Val Val Tyr  
 225 230 235 240  
 Thr Phe Gln Ser Phe Lys Glu Tyr Tyr Ala Gln Met Gly Ile Glu Ile  
 245 250 255  
 Glu Asp Ile Tyr Pro Asp Ser Ala Asp Leu Lys Asn Arg Ala Tyr Arg  
 260 265 270  
 Asp Lys Glu Glu Lys Gln Asp Asp Thr Leu Ile Lys Glu Asn Leu Ser  
 275 280 285  
 Phe Tyr His His Leu Phe Ala Gln Thr Ile Ala Arg Asn Leu Gly Val  
 290 295 300  
 Lys Tyr Asp Ala Gln Asp Pro Leu Phe Arg Gly Gln Thr Phe Phe Ala  
 305 310 315 320  
 Asp Thr Ala Leu Ala Lys Gly Tyr Val Asp Ala Tyr Gly Ser Leu Glu  
 325 330 335  
 Asp Ala Ile Leu Trp Val Ser Ala Gln Lys Thr Val Lys Arg Ala Asn  
 340 345 350  
 Lys Met Ile  
 355

<210> 6526  
 <211> 157  
 <212> PRT  
 <213> B.fragilis

<400> 6526  
 Arg Lys Asn Ala Glu Tyr Leu Lys Ile Asn Lys Leu Tyr Asn Met Lys  
 1 5 10 15  
 Thr Ile Lys Arg Pro Tyr Thr Pro Val Cys Asp Leu Glu Leu Val Pro  
 20 25 30  
 Val Glu Cys Ile Ser Asp Phe Ala Val Ile Leu Pro Arg Ala Phe Ile  
 35 40 45  
 Ala Val Arg Asp Gly Ser Tyr Arg Ile Pro Val Ile Pro Gly Ser Phe  
 50 55 60  
 Thr Pro Gly Val Glu Ser Glu Gln Ala Asp Ser Gly Thr Ile Tyr Tyr  
 65 70 75 80  
 Asn Val Gly His Thr Phe Glu Val Ala Leu Thr Gly Pro Asp Ser Gln  
 85 90 95  
 Glu Leu Leu Ser Ala Met Ser Leu Gln Asp Leu Val Ala Ile Tyr Thr  
 100 105 110  
 Asn Glu Ala Gly Glu Arg Ile Val Ser Gly Ser Pro Gln Thr Pro Leu  
 115 120 125  
 Lys Leu Thr Phe Ser Ile Val Ser Gly Lys Tyr Gln Cys Lys Leu Ser  
 130 135 140  
 Gly Lys Gln Val Tyr Ile Glu Ala Tyr His Ser Pro Phe  
 145 150 155

<210> 6527  
 <211> 274  
 <212> PRT  
 <213> B.fragilis

<220>  
 <221> UNSURE



&lt;222&gt; (251)

&lt;223&gt; Identity of amino acid sequences at the above locations are unknown.

&lt;400&gt; 6527

Gln Asp Asp Leu Ile Leu Thr Ile Lys Val Asn Leu Phe Met Lys Asn  
 1 5 10 15  
 Tyr Phe Ala Ser Phe Ile Pro Ala Val Lys Ala Ile Leu Gly Ile Glu  
 20 25 30  
 Ala Trp Ser Lys Asp Ala Asp Lys Lys Asp Ala Leu Leu Glu Glu Gln  
 35 40 45  
 Lys Gln Lys Leu Lys Ala Leu Asn Phe Asn Asp Thr Phe Ile Asn Gly  
 50 55 60  
 Phe Cys Glu Ala Leu Lys Asp Gly Phe Pro Glu Asp Ser Ser Arg Lys  
 65 70 75 80  
 Asp Gly Glu Ser Gly Thr Lys Gly Ser Gly Pro Asp Pro Asn Thr Ser  
 85 90 95  
 Asn Ala Val Ile Gln Gly Leu Leu Ala Asp Met Thr Ala Lys Leu Val  
 100 105 110  
 Thr Ala Gln Glu Glu Ile Ala Val Leu Thr Lys Glu Lys Gly Glu Leu  
 115 120 125  
 Ser Gln Glu Val Ser Ala Lys Gln Thr Glu Ile Thr Gly Leu Gln Thr  
 130 135 140  
 Lys Ile Gln Thr Leu Ser Gly Leu Ala Glu Gln Asp Gly Gly Lys Gly  
 145 150 155 160  
 Phe Gln His Ala Arg Leu Glu Pro Asp Ala Lys Asp Ile Val Met Asn  
 165 170 175  
 Trp Asp Asp Glu Lys Gln Leu Gly Gly Leu Ser Gly Glu Met Phe Ala  
 180 185 190  
 Met Gly Pro Pro Tyr Asn Gln Arg Leu Arg Ala Lys Met Leu Tyr Arg  
 195 200 205  
 Lys Gly Leu Thr Arg Gln Val Pro Thr Ala Ser Ser Ile Asp Tyr Ser  
 210 215 220  
 Arg Leu Lys Glu Asp Leu Gly Ala Phe Tyr Arg Ile Pro Trp Gln Glu  
 225 230 235 240  
 Arg Leu Gln Ser Phe Leu Thr Leu Leu Pro Xaa Ile Glu Ser Ile Phe  
 245 250 255  
 Pro Ala Glu Phe Gly Ile Ser Gly Pro Gly Arg Ala Tyr Lys His Leu  
 260 265 270  
 Gly Trp

&lt;210&gt; 6528

&lt;211&gt; 168

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6528

Lys Lys His Gln Leu Met Ile Thr Thr Lys Ile Thr Val Glu Pro His  
 1 5 10 15  
 Leu Ala Gln Tyr Cys Tyr Ala Lys Tyr Ser Ser Asp Pro Glu Gly Ser  
 20 25 30  
 Met Pro Val Arg Phe Ala Asp His Leu Asp Val Tyr His Leu Val Tyr  
 35 40 45  
 Asn Leu Leu Glu Lys Arg Pro Val Asn Cys Pro Arg Asp Asn Gly Asn  
 50 55 60  
 Leu Glu Ile Val Leu Pro Asp Arg Arg Gln Gly Asp Val Pro Gly Gly  
 65 70 75 80  
 Lys Ser Pro Glu Arg Phe Asn Tyr Leu Gly Gln Arg Ser Gln Gly Ile  
 85 90 95

Ile Asn Lys Lys Leu Lys Leu Met Met Arg Ala Glu Leu His Asp Phe  
 100 105 110  
 Ile Asp Glu Asn Lys His Arg Phe Gly Ile Asp Gln Leu Gln Ser Val  
 115 120 125  
 His Cys Phe Met Lys Lys Tyr Cys Ile Asp Ser Leu Ser Glu Asp Ala  
 130 135 140  
 Leu Leu Lys Asp Tyr Gln Arg Trp Arg Asp Arg Val Arg Arg Ser Ser  
 145 150 155 160  
 Leu Lys Arg Pro Tyr Lys Lys Lys  
 165

<210> 6529  
 <211> 205  
 <212> PRT  
 <213> B.fragilis

<400> 6529  
 Lys Lys Met Glu Val Glu Leu Val Lys Thr Thr Leu His Ala Val Leu  
 1 5 10 15  
 Ser Pro Ser Gln Leu Gln Lys Pro Cys Val Arg Lys Lys Glu Leu Thr  
 20 25 30  
 Pro Leu Gln Ile Ser Leu Lys Thr Gly Ser Thr Ala Ser Gln Leu Val  
 35 40 45  
 Asp Glu Trp Gly Gly Thr Ile Ala Gln Leu Asn Met Gly Ala Pro Leu  
 50 55 60  
 Tyr Asp Val Ala Ala Asn Gly Glu Ile Pro Thr Leu Ala Asp Val Gly  
 65 70 75 80  
 Val Val Phe Gly Asn Ser Thr Ser Val Arg Ile Ile Thr Ser His Leu  
 85 90 95  
 Glu Ser Val Leu Lys Tyr Ala Gly Val Glu Leu Ser Arg Glu Gln Met  
 100 105 110  
 Ala Glu Thr Ala Leu Ala Ile Leu Ser Gly Tyr Trp Phe Leu Asn Leu  
 115 120 125  
 Ala Glu Leu Cys Ile Phe Phe Thr Arg Leu Lys Asn Gly Ser Cys Gly  
 130 135 140  
 Gln Leu Val Trp Gly Lys Ser Leu Asn Asn Gln Ala Val Met Val Ala  
 145 150 155 160  
 Leu Ser Asp Phe Cys Lys Glu Arg Arg Glu Val Ile Ile Arg Lys Glu  
 165 170 175  
 Thr Glu Arg Met Gly Pro Gly Leu Trp Lys Lys Ala Phe Pro Glu Arg  
 180 185 190  
 Arg Ile Leu Pro Pro Val Leu Cys Trp Ala Tyr Arg Val  
 195 200 205

<210> 6530  
 <211> 293  
 <212> PRT  
 <213> B.fragilis

<400> 6530  
 Lys Ser Arg Arg Asn Leu Pro Arg Leu Cys Val Arg Leu Arg Thr Pro  
 1 5 10 15  
 Tyr Leu Ile Cys Leu Leu Cys Asn Ile Tyr Arg Asp Lys Gly Tyr Tyr  
 20 25 30  
 Ile Glu Trp Asp Glu Asp Leu Pro Phe Val Val Ala Asp Thr Ile Gly  
 35 40 45  
 Thr Thr Glu Gly Ala Val Glu Glu Val Val Lys Lys Ala Val Gln Val  
 50 55 60  
 Gly Phe Phe Asp Lys Ser Leu Phe Asp Gln Tyr Arg Ile Leu Thr Ser

65				70				75			80				
Asn	Gly	Ile	Gln	Asn	Arg	Phe	Lys	Ser	Ala	Val	Ser	Arg	Arg	Glu	Gly
				85				90						95	
Phe	Glu	Tyr	Ile	Pro	Glu	Tyr	Leu	Val	Ser	Val	Cys	Asn	Asn	Pro	Ile
			100					105						110	
Gln	Ser	Asn	Phe	Cys	Ile	Gln	Lys	Pro	Ser	Ser	Thr	Glu	Phe	Leu	Tyr
		115					120					125			
Ala	Glu	Thr	Gln	Pro	Asn	Arg	Val	Ser	Ala	Cys	Lys	Ser	Thr	Gln	Ser
	130						135				140				
Lys	Val	Lys	Glu	Arg	Ile	Ser	Pro	Pro	Pro	His	Ala	Arg	Glu	Gly	Gly
145					150					155					160
Ile	Ser	Gly	Ile	Arg	Leu	Phe	Ser	Asp	Lys	Ser	Leu	Thr	Glu	Cys	Tyr
			165					170						175	
Gly	Glu	Leu	Lys	Ala	Asn	Ile	Pro	Trp	Met	Glu	Gln	Phe	Cys	Met	Asn
			180					185					190		
Ile	Arg	Leu	Asp	Tyr	Pro	Asp	Phe	Thr	Pro	Glu	Leu	Phe	Tyr	Gly	Phe
	195						200					205			
Leu	Asp	Arg	Phe	Phe	Arg	Lys	Leu	Gln	Asn	Glu	Gly	Glu	Ile	Val	Lys
	210					215					220				
Ser	Pro	Lys	Asp	Ala	Met	Ser	His	Phe	Ala	Asn	Trp	Leu	Asn	Ile	Glu
225				230						235					240
Leu	Glu	Lys	Leu	Lys	Lys	Asp	Gly	Ser	Arg	Thr	Ser	Lys	Asn	His	Pro
			245						250					255	
Ala	Cys	Gly	Ser	Glu	Pro	Val	Ser	Val	Thr	Glu	Thr	Leu	Cys	Pro	Lys
			260					265					270		
Glu	Gly	Ala	Asp	Ala	Ser	Pro	Asp	Leu	Val	Lys	Asn	Trp	Ile	Asp	Gly
		275					280					285			
Leu	Ser	Ile	Gly	Gly											
	290														

&lt;210&gt; 6531

&lt;211&gt; 268

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6531

Lys	Asn	Asn	Ile	Pro	Met	Ile	Val	Ala	Trp	Phe	Ser	Cys	Gly	Val	Thr
1				5					10					15	
Ser	Ala	Val	Ala	Cys	Lys	Ile	Ala	Leu	Ser	Leu	Tyr	Asp	Asp	Val	Gln
			20					25					30		
Leu	Tyr	Tyr	Ile	Glu	Thr	Gly	Ser	Gly	His	Pro	Asp	Asn	Ala	Arg	Phe
		35					40					45			
Leu	Ser	Asp	Cys	Glu	Arg	Trp	Tyr	Asp	Gln	Pro	Ile	His	Ile	Ile	Arg
	50					55					60				
Ser	Asp	Lys	Tyr	Thr	Cys	Val	Ala	Asp	Val	Leu	Arg	Lys	Gly	Phe	Ile
65					70					75					80
Asn	Gly	Ala	His	Gly	Ala	Ala	Cys	Thr	Leu	Glu	Leu	Lys	Lys	Lys	Val
				85					90					95	
Arg	Tyr	Lys	Leu	Glu	Lys	Glu	Leu	Gly	Ser	Trp	Asp	Gly	Gln	Val	Trp
			100					105					110		
Gly	Phe	Asp	Tyr	Glu	Pro	Lys	Glu	Ile	Asn	Arg	Ala	Ile	Arg	Leu	Lys
		115					120					125			
Gln	Gln	Tyr	Pro	Asp	Thr	Lys	Pro	Leu	Phe	Pro	Leu	Ile	Glu	Lys	Gln
	130					135					140				
Ile	Thr	Lys	Pro	Asp	Ala	Met	Gly	Ile	Leu	Trp	Lys	Ala	Gly	Ile	Glu
145					150					155					160
Ile	Pro	Ala	Met	Tyr	Lys	Met	Gly	Tyr	Asn	Asn	Asn	Asn	Cys	Ile	Gly
			165					170						175	
Cys	Val	Lys	Gly	Gly	Met	Gly	Tyr	Trp	Asn	Lys	Ile	Arg	Lys	Asp	Phe

	180		185		190										
Pro	Glu	Val	Phe	Ala	Gln	Met	Ala	Gln	Ile	Glu	Arg	Asp	Val	Gly	Ala
	195						200					205			
Thr	Cys	Leu	Lys	Asp	Lys	Asp	Gly	Arg	Ile	Phe	Leu	Asp	Glu	Leu	Pro
	210						215					220			
Thr	Trp	Arg	Gly	Asp	Pro	Val	Glu	Glu	Ile	Ile	Pro	Asp	Cys	Ser	Leu
225					230						235				240
Ile	Cys	Gln	Ile	Glu	Phe	Gln	Glu	Ile	Ile	Asp	Arg	Gln	Val	Lys	Arg
				245						250				255	
Val	Leu	Lys	Gly	Glu	Ile	Ser	Ile	Asn	Asp	Val	Ala				
			260					265							

<210> 6532  
 <211> 62  
 <212> PRT  
 <213> B.fragilis

Thr	Met	Lys	Val	Val	Ile	Tyr	Trp	Gln	Lys	Lys	Ser	Thr	Val	His	His
1				5					10					15	
Arg	Arg	Arg	Ile	Arg	Asp	Arg	Phe	Arg	Leu	Pro	Asp	Gly	Met	Thr	Ile
			20					25					30		
Asn	Gly	Glu	Thr	Pro	Ala	Asp	Val	Arg	Pro	Glu	Asp	Met	Lys	Glu	Leu
		35					40					45			
Gln	Thr	Leu	Glu	Glu	Met	Gly	Tyr	Ile	Lys	Leu	Arg	Asn	Lys		
	50					55					60				

<210> 6533  
 <211> 115  
 <212> PRT  
 <213> B.fragilis

Ser	Asp	His	Ser	Gln	Arg	Asp	Arg	Ala	Asp	Gly	Pro	Gly	Ala	Val	Glu
1				5					10					15	
Lys	Gly	Phe	Ser	Arg	Thr	Glu	Asp	Phe	Ala	Ala	Gly	Ile	Val	Leu	Gly
			20					25					30		
Val	Gln	Gly	Ile	Ala	Val	Lys	Arg	Glu	Arg	Ala	Lys	Ala	Asp	Phe	Asn
		35					40					45			
Ala	Phe	Leu	Glu	Phe	Phe	Pro	Cys	Leu	Pro	Ser	Gly	Tyr	Asp	Pro	Ile
	50					55					60				
Ala	Leu	Trp	Lys	Ala	Trp	Gly	Gly	Asp	Pro	Asp	Ala	Ile	Asn	Leu	Leu
65					70					75				80	
Phe	Gly	Asn	Asn	Pro	Pro	Gly	Val	Glu	Ala	Ala	Ala	Glu	Ser	Val	Gly
				85					90					95	
Arg	Tyr	Leu	Cys	Asp	Tyr	Asn	Val	Tyr	Gln	Ala	Arg	Val	Lys	Ala	Lys
			100					105					110		
Ala	Ser	Leu													
		115													

<210> 6534  
 <211> 63  
 <212> PRT  
 <213> B.fragilis

Glu	Thr	Ser	Ser	His	Phe	Asn	Thr	Phe	Ser	Gly	Asp	Ser	Thr	Val	Arg
1				5					10					15	
Pro	His	Pro	Gln	Asn	Asn	Asn	Thr	Gln	Thr	Gly	Gln	Asn	Asn	Asn	Lys

	20		25		30										
Pro	Phe	Ser	Leu	Phe	Leu	Ser	Asn	Lys	Leu	Lys	Glu	Ala	Leu	Ile	Ile
	35						40					45			
Asn	Ile	Leu	Phe	Phe	Tyr	His	His	Ile	Pro	Pro	Thr	Glu	Ser	Leu	
	50					55					60				

&lt;210&gt; 6535

&lt;211&gt; 80

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6535

Ile	Lys	Gln	Ser	Ile	Lys	Val	Phe	Tyr	His	Gln	Ala	Thr	Thr	Tyr	Leu
1				5					10					15	
Asn	Lys	Ile	Thr	Asp	Cys	Asn	Asn	Ser	Phe	Pro	Ala	Tyr	Phe	Pro	Cys
			20					25					30		
Ile	Ser	Pro	Leu	Phe	His	Ile	Pro	Leu	Ser	Lys	Ile	Lys	Val	Leu	Lys
	35					40						45			
His	Pro	Asp	Val	Ile	Tyr	Gln	Asn	Thr	Arg	Met	Phe	Tyr	Ile	Arg	Thr
	50					55					60				
Ser	Gly	Cys	Tyr	Leu	Leu	Lys	His	Pro	Asp	Val	Phe	Arg	His	Asn	Leu
65					70					75				80	

&lt;210&gt; 6536

&lt;211&gt; 64

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6536

Gln	Phe	Leu	Pro	Cys	Leu	Lys	Leu	Asn	Phe	Pro	Pro	Ser	Leu	Ser	Lys
1				5				10					15		
Lys	Cys	Arg	Lys	Leu	Ala	Ser	Ser	Lys	Asn	Asn	Glu	Tyr	Ser	Gln	Phe
			20					25					30		
Lys	Lys	Gln	Arg	Tyr	Glu	Lys	Phe	Lys	Leu	Gln	Lys	Arg	Phe	Asn	Trp
	35					40						45			
Ser	Ser	Gly	Arg	Ala	Thr	Ser	Leu	Cys	Ile	Gln	Thr	Asn	Asn	Arg	Pro
	50					55					60				

&lt;210&gt; 6537

&lt;211&gt; 488

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6537

Val	Tyr	Asn	Thr	Lys	Gly	Asn	Lys	Ile	Gly	Phe	Tyr	Met	Ala	Thr	Thr
1				5				10						15	
Asp	Phe	Ile	Ala	Ala	Ile	Glu	Leu	Gly	Ser	Ser	Lys	Ile	Ala	Gly	Ile
			20					25					30		
Ala	Gly	Lys	Lys	Asn	Ser	Asp	Gly	Ser	Ile	Gln	Val	Leu	Ala	Tyr	Ala
	35					40						45			
Arg	Glu	Asp	Ser	Ser	Ser	Phe	Ile	Arg	Lys	Gly	Val	Ile	Tyr	Asn	Leu
	50					55					60				
Asp	Lys	Thr	Ala	Gln	Ser	Leu	Thr	Ser	Ile	Ile	Asn	Lys	Leu	Glu	Gly
65					70					75				80	
Ala	Leu	Asn	Asn	Ser	Ile	Ala	Lys	Ile	Tyr	Val	Gly	Ile	Gly	Gly	Gln
				85					90					95	
Ser	Leu	Arg	Thr	Val	Arg	Asn	Val	Val	Ser	Arg	Asp	Leu	Glu	Glu	Glu
			100					105					110		
Thr	Ile	Ile	Ser	Gln	Glu	Leu	Val	Asp	Ser	Ile	Cys	Asp	Glu	Asn	Leu

115	120	125
Glu Ile Pro Leu Ile Asp Met Asp Ile Leu Asp Val Ala Pro Gln Glu		
130	135	140
Tyr Lys Ile Gly Asn Asn Leu Gln Ala Asp Pro Val Gly Val Ala Gly		
145	150	155
Ser His Ile Glu Gly Arg Phe Leu Asn Ile Val Ala Arg Ala Ser Leu		
165	170	175
Lys Lys Asn Leu Glu Arg Cys Phe Glu Gln Ala Lys Ile Glu Ile Ala		
180	185	190
Asp Leu Leu Ile Ser Pro Leu Val Thr Ala Asp Ala Val Leu Thr Glu		
195	200	205
Ser Glu Arg Arg Ser Gly Cys Ala Leu Ile Asp Phe Gly Ala Asp Thr		
210	215	220
Ser Thr Ile Ser Ile Tyr Lys Asn Asn Ile Leu Arg Phe Leu Thr Val		
225	230	235
Leu Pro Leu Gly Gly Asn Ser Ile Thr His Asp Leu Val Ser Leu Gln		
245	250	255
Met Glu Glu Glu Glu Ala Glu Arg Leu Lys Ile Arg Tyr Gly Asn Ala		
260	265	270
Phe Tyr Glu Glu Glu Glu Gly Glu Glu Pro Ala Thr Cys Gln Leu Glu		
275	280	285
Asp Gly Asn Arg Thr Ile Glu Leu Gly Lys Leu Asn Asn Ile Ile Glu		
290	295	300
Ala Arg Thr Glu Glu Ile Ala Asn Val Trp Asn Gln Ile Gln Leu		
305	310	315
Ser Gly Tyr Asp Asp Lys Leu Leu Ala Gly Leu Ile Ile Thr Gly Gly		
325	330	335
Ala Ala Asn Leu Lys Asp Leu Asp Glu Val Leu Arg Lys Arg Ser Lys		
340	345	350
Ile Glu Lys Val Arg Asn Ala Arg Phe Val Arg Asn Thr Ile His Ala		
355	360	365
Asp Glu Asp Val Val Lys Lys Asp Gly Thr Gln Asn Thr Leu Phe Gly		
370	375	380
Leu Leu Ile Ala Gly Asn Glu Asn Cys Cys Leu Leu Glu Thr Pro Ala		
385	390	395
Pro Gln Pro His Ile Gln Pro Gln Pro Gln Pro Glu Pro Val Asn Met		
405	410	415
Phe Glu Glu Asp Glu Ser Leu Lys Glu Gln Glu Ala Ala Arg Ala		
420	425	430
Ala Lys Lys Lys Lys Glu Glu Glu Lys Lys Arg Lys Glu Glu Glu		
435	440	445
Lys Gln Arg Lys Leu Glu Glu Lys Lys Arg Arg Glu Glu Glu Arg Arg		
450	455	460
Asn Lys Pro Asn Trp Phe Lys Ser Thr Phe Asp Lys Leu Ser Asn Glu		
465	470	475
Ile Phe Ser Asp Glu Asp Met Lys		
485		

&lt;210&gt; 6538

&lt;211&gt; 489

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6538

Lys His Cys Thr Pro Gly Phe Thr Gly Phe Cys Cys Arg Tyr Cys Lys
1 5 10 15
Arg Ser Tyr Lys Ile Ser Ala Thr Ile Met Asn Ile Glu Thr Ile Gln
20 25 30
Ser Val Tyr Phe Val Gly Ala Gly Gly Ile Gly Met Ser Ala Leu Val

35	40	45
Arg Tyr Phe Leu Ser Lys Gly Lys Val Val Ala Gly Tyr Asp Arg Thr		
50	55	60
Pro Ser Glu Leu Thr Gln His Leu Ile Glu Glu Gly Ala Gln Ile His		
65	70	75
Tyr Glu Glu Asn Ile Asp Leu Ile Pro Glu Ala Cys Lys Asp Lys Ala		
85	90	95
Thr Thr Leu Val Val Leu Thr Pro Ala Val Pro Gln Glu His Ala Glu		
100	105	110
Leu Thr Tyr Phe Arg Asp Asn Gly Phe Glu Ile Gln Lys Arg Ala Gln		
115	120	125
Val Leu Gly Thr Ile Thr Arg Ser Ser Lys Gly Leu Cys Val Ala Gly		
130	135	140
Thr His Gly Lys Thr Thr Thr Ser Thr Met Thr Ala His Leu Phe His		
145	150	155
Gln Ser His Val Gly Cys Thr Ala Phe Leu Gly Gly Ile Ser Lys Asn		
165	170	175
Tyr Gly Thr Asn Leu Leu Leu Ser Ser Thr Ser Pro Tyr Thr Val Ile		
180	185	190
Glu Ala Asp Glu Phe Asp Arg Ser Phe His Trp Leu Ser Pro Tyr Met		
195	200	205
Ser Val Ile Thr Ala Thr Asp Pro Asp His Leu Asp Ile Tyr Gly Thr		
210	215	220
Glu Gln Ala Tyr Leu Glu Ser Phe Glu His Tyr Thr Thr Leu Ile Gln		
225	230	235
Pro Gly Gly Ala Leu Ile Ile Arg Lys Gly Ile Ser Leu Gln Pro Lys		
245	250	255
Val Lys Glu Gly Val Lys Met Tyr Thr Tyr Ser Arg Asp Glu Gly Asp		
260	265	270
Phe His Ala Glu Asn Ile Arg Ile Gly Asn Gly Glu Ile Phe Ile Asp		
275	280	285
Phe Val Gly Pro Asp Ile Arg Ile Asp Asn Ile Gln Leu Gly Val Pro		
290	295	300
Val Ser Ile Asn Ile Glu Asn Gly Val Ala Ala Met Ala Leu Ala His		
305	310	315
Leu Asn Gly Val Thr Pro Glu Glu Ile Lys Gln Gly Met Ala Ser Phe		
325	330	335
Arg Gly Val Asp Arg Arg Phe Asp Phe Lys Ile Lys Asn Asn Arg Ile		
340	345	350
Val Phe Leu Ser Asp Tyr Ala His Pro Ser Glu Ile Lys Gln Ser		
355	360	365
Val Met Ser Met Arg Glu Leu Tyr Arg Asp Lys Lys Ile Thr Ala Val		
370	375	380
Phe Gln Pro His Leu Tyr Thr Arg Thr Arg Asp Phe Tyr Lys Asp Phe		
385	390	395
Ala Asp Ser Leu Ser Leu Leu Asp Glu Val Ile Leu Val Asp Ile Tyr		
405	410	415
Pro Ala Arg Glu Gln Pro Ile Pro Gly Val Ser Ser Arg Leu Ile Tyr		
420	425	430
Asp Asn Leu Arg Pro Gly Ile Glu Lys Ser Met Cys Lys Lys Glu Glu		
435	440	445
Ile Leu Asp Val Leu Lys Ala Lys His Ile Glu Val Leu Ile Thr Leu		
450	455	460
Gly Ala Gly Asp Ile Asp Asn Tyr Val Pro Gly Ile Cys Asp Leu Leu		
465	470	475
Ser Arg Arg Met Val Pro Ser Asp Asn		
485		

<211> 254  
 <212> PRT  
 <213> B.fragilis

<400> 6539

Ile	Val	Lys	Thr	Ile	Asn	Phe	Leu	Met	Ile	Lys	Arg	Ile	Leu	Leu	Thr
1				5					10				15		
Ile	Val	Met	Leu	Leu	Ile	Ala	Tyr	Leu	Val	Ala	Ala	Val	Thr	Val	
			20					25				30			
Phe	Asn	Asp	Lys	Pro	Ala	His	Gln	Val	Cys	Arg	Asp	Met	Glu	Leu	Val
		35					40				45				
Ile	Lys	Asp	Thr	Leu	Asn	Ala	Gly	Phe	Val	Thr	Lys	Asn	Glu	Val	Ala
	50					55				60					
Ala	Ile	Leu	Gln	Lys	Lys	Gly	Ile	Tyr	Pro	Val	Gly	Lys	Lys	Met	Asp
65					70					75				80	
Arg	Val	His	Thr	Lys	Thr	Leu	Glu	Lys	Glu	Leu	Asp	Lys	His	Pro	Leu
				85					90					95	
Ile	Asn	Glu	Ala	Gln	Cys	Tyr	Lys	Thr	Pro	Asn	Gly	Lys	Ile	Cys	Val
			100					105					110		
Glu	Val	Thr	Gln	Arg	Val	Pro	Ile	Leu	His	Ile	Met	Ser	Ser	Asn	Gly
		115					120					125			
Glu	Asn	Tyr	Tyr	Leu	Asp	Asn	Lys	Gly	Lys	Met	Met	Pro	Pro	Asp	Ala
	130					135					140				
Lys	Cys	Val	Ala	His	Arg	Ala	Ile	Val	Thr	Gly	Asn	Val	Glu	Lys	Ser
145					150					155				160	
Phe	Ala	Met	Lys	Asp	Leu	Tyr	Lys	Phe	Gly	Val	Phe	Leu	Gln	Asn	Asn
				165					170					175	
Pro	Phe	Trp	Glu	Ala	Gln	Ile	Val	Gln	Ile	Asn	Val	Leu	Pro	Gly	Lys
			180					185					190		
Glu	Ile	Glu	Leu	Val	Pro	Arg	Val	Gly	Asn	His	Ile	Ile	Tyr	Leu	Gly
		195					200					205			
Lys	Leu	Glu	His	Phe	Glu	Asp	Lys	Leu	Lys	Arg	Leu	Lys	Thr	Phe	Tyr
	210					215					220				
Glu	Lys	Gly	Leu	Asn	Gln	Val	Gly	Trp	Asn	Lys	Tyr	Ser	Arg	Ile	Ser
225					230					235				240	
Leu	Glu	Phe	Gly	Asn	Gln	Ile	Ile	Cys	Thr	Lys	Lys	Lys	Gln		
				245					250						

<210> 6540  
 <211> 669  
 <212> PRT  
 <213> B.fragilis

<400> 6540

Leu	Arg	Tyr	Phe	His	Tyr	Ile	Cys	Ser	Val	Ile	Ile	Ile	Arg	Asn	Gln
1				5					10					15	
Ile	Met	Ser	Glu	Glu	Gln	Asn	Pro	Thr	Asn	Asn	Gly	Ser	Tyr	Ser	Ala
			20					25					30		
Asp	Ser	Ile	Gln	Val	Leu	Glu	Gly	Leu	Glu	Ala	Val	Arg	Lys	Arg	Pro
		35					40					45			
Ala	Met	Tyr	Ile	Gly	Asp	Ile	Ser	Val	Lys	Gly	Leu	His	His	Leu	Val
	50					55					60				
Tyr	Glu	Ile	Val	Asp	Asn	Ser	Ile	Asp	Glu	Ala	Leu	Ala	Gly	Tyr	Cys
65					70					75				80	
Asp	His	Ile	Glu	Val	Thr	Ile	Asn	Glu	Asp	Asn	Ser	Ile	Thr	Val	Gln
				85					90					95	
Asp	Asn	Gly	Arg	Gly	Ile	Pro	Val	Asp	Phe	His	Glu	Lys	Glu	Gln	Lys
			100					105					110		
Ser	Ala	Leu	Glu	Val	Ala	Met	Thr	Val	Leu	His	Ala	Gly	Gly	Lys	Phe



115	120	125
Asp Lys Gly Ser Tyr Lys Val Ser Gly Gly Leu His Gly Val Gly Met		
130	135	140
Ser Cys Val Asn Ala Leu Ser Thr His Met Thr Thr Gln Val Phe Arg		
145	150	155
Asn Gly Lys Ile Tyr Gln Gln Glu Tyr Glu Ile Gly Lys Pro Leu Tyr		
165	170	175
Pro Val Lys Glu Val Gly Ile Ala Asp His Thr Gly Thr Lys Gln Gln		
180	185	190
Phe Trp Pro Asp Asp Ser Ile Phe Thr Glu Thr Ile Tyr Asp Tyr Lys		
195	200	205
Ile Leu Ala Ser Arg Leu Arg Glu Leu Ala Tyr Leu Asn Ala Gly Leu		
210	215	220
Arg Ile Ser Leu Thr Asp Arg Arg Val Val Asn Glu Asp Gly Ser Phe		
225	230	235
Lys His Glu Thr Phe Tyr Ser Glu Glu Gly Leu Arg Glu Phe Val Arg		
245	250	255
Phe Ile Glu Ser Ser Arg Glu His Leu Ile Asn Asp Val Ile Tyr Leu		
260	265	270
Asn Thr Glu Lys Gln Asn Ile Pro Ile Glu Val Ala Ile Met Tyr Asn		
275	280	285
Thr Gly Phe Ser Glu Asn Ile His Ser Tyr Val Asn Asn Ile Asn Thr		
290	295	300
Ile Glu Gly Gly Thr His Leu Ala Gly Phe Arg Arg Ala Leu Thr Arg		
305	310	315
Thr Leu Lys Lys Tyr Ala Glu Asp Ser Lys Met Leu Glu Lys Val Lys		
325	330	335
Val Glu Ile Ser Gly Asp Asp Phe Arg Glu Gly Leu Thr Ala Val Ile		
340	345	350
Ser Val Lys Val Ala Glu Pro Gln Phe Glu Gly Gln Thr Lys Thr Lys		
355	360	365
Leu Gly Asn Asn Glu Val Met Gly Ala Val Asp Gln Ala Val Gly Glu		
370	375	380
Val Leu Asn Tyr Tyr Leu Glu Glu His Pro Lys Glu Ala Lys Ala Ile		
385	390	395
Val Asp Lys Val Ile Leu Ala Ala Thr Ala Arg His Ala Ala Arg Lys		
405	410	415
Ala Arg Glu Met Val Gln Arg Lys Ser Pro Met Ser Gly Gly Gly Leu		
420	425	430
Pro Gly Lys Leu Ala Asp Cys Ser Asp Lys Asp Pro Gln Lys Cys Glu		
435	440	445
Leu Phe Leu Val Glu Gly Asp Ser Ala Gly Gly Thr Ala Lys Gln Gly		
450	455	460
Arg Asn Arg Ala Phe Gln Ala Ile Leu Pro Leu Arg Gly Lys Ile Leu		
465	470	475
Asn Val Glu Lys Ala Met Tyr His Lys Ala Leu Glu Ser Glu Glu Ile		
485	490	495
Arg Asn Ile Tyr Thr Ala Leu Gly Val Thr Ile Gly Thr Glu Glu Asp		
500	505	510
Ser Lys Ala Ala Asn Ile Asp Lys Leu Arg Tyr His Lys Ile Ile Ile		
515	520	525
Met Thr Asp Ala Asp Val Asp Gly Ser His Ile Asp Thr Leu Ile Met		
530	535	540
Thr Phe Phe Phe Arg Tyr Met Pro Gln Ile Ile Gln Asn Gly Tyr Leu		
545	550	555
Tyr Ile Ala Thr Pro Pro Leu Tyr Leu Cys Lys Lys Gly Lys Ile Glu		
565	570	575
Glu Tyr Cys Trp Thr Asp Ala Gln Arg Gln Lys Phe Ile Asp Thr Tyr		
580	585	590

115 120 125  
 130 135 140  
 145 150 155  
 165 170 175  
 180 185 190  
 195 200 205  
 210 215 220  
 225 230 235  
 245 250 255  
 260 265 270  
 275 280 285  
 290 295 300  
 305 310 315  
 325 330 335  
 340 345 350  
 355 360 365  
 370 375 380  
 385 390 395  
 405 410 415  
 420 425 430  
 435 440 445  
 450 455 460  
 465 470 475  
 485 490 495  
 500 505 510  
 515 520 525  
 530 535 540  
 545 550 555  
 565 570 575  
 580 585 590

[illegible]

<400> 6541

Lys	Leu	Lys	Ala	Val	Asp	Leu	Leu	Lys	Asn	Ile	Phe	Lys	Gly	Asp	Lys
1				5					10					15	
Val	Ile	Trp	Ile	Ile	Phe	Leu	Cys	Leu	Cys	Leu	Ile	Ser	Ile	Ile	Glu
			20					25					30		
Val	Phe	Ser	Ala	Ala	Ser	Thr	Leu	Thr	Tyr	Lys	Ser	Gly	Asp	His	Trp
		35					40				45				
Gly	Pro	Ile	Thr	Gln	His	Ser	Ile	Ile	Leu	Met	Val	Gly	Ala	Val	Val
	50					55					60				
Val	Val	Leu	Met	His	Asn	Ile	Pro	Tyr	Lys	Trp	Phe	Gln	Val	Phe	Pro
65				70					75					80	
Val	Phe	Leu	Tyr	Pro	Ile	Ser	Val	Val	Leu	Leu	Ala	Phe	Val	Thr	Leu
			85						90					95	
Met	Gly	Val	Ile	Thr	Gly	Asp	Arg	Val	Asn	Gly	Ala	Ala	Arg	Trp	Met
			100					105					110		
Ser	Phe	Met	Gly	Leu	Gln	Phe	Gln	Pro	Ser	Glu	Leu	Ala	Lys	Met	Ala
		115					120					125			
Val	Ile	Ile	Ala	Val	Ser	Phe	Ile	Leu	Ser	Lys	Lys	Gln	Asp	Asp	Glu
	130					135					140				
Gly	Ala	Asn	Pro	Lys	Ala	Phe	Lys	Tyr	Ile	Met	Ile	Leu	Thr	Gly	Leu
145				150						155					160
Val	Cys	Met	Leu	Ile	Ala	Pro	Glu	Asn	Leu	Ser	Thr	Ala	Met	Leu	Leu
			165					170						175	
Phe	Gly	Val	Val	Val	Leu	Met	Met	Phe	Ile	Gly	Arg	Val	Ala	Phe	Lys
		180						185				190			
Lys	Leu	Ala	Met	Leu	Leu	Gly	Gly	Leu	Ala	Leu	Val	Gly	Cys	Leu	Gly
		195					200					205			
Ala	Val	Phe	Leu	Leu	Ala	Ile	Pro	Lys	Asp	Thr	Asp	Ile	Pro	Phe	Leu
						215					220				
His	Arg	Phe	Asp	Thr	Trp	Lys	Ser	Arg	Ile	Thr	Asn	Phe	Thr	Glu	Lys
225				230						235					240
Glu	Glu	Val	Pro	Ala	Ala	Lys	Phe	Asp	Ile	Asp	Lys	Asp	Ala	Gln	Ile
			245						250					255	
Ala	His	Ala	Arg	Ile	Ala	Ile	Ala	Thr	Ser	Asn	Val	Ile	Gly	Lys	Ala
		260						265						270	
Pro	Gly	Asn	Ser	Ile	Gln	Arg	Asp	Phe	Leu	Ser	Gln	Ala	Phe	Ser	Asp
		275					280					285			
Phe	Ile	Phe	Ala	Ile	Ile	Ile	Glu	Glu	Leu	Gly	Leu	Val	Gly	Gly	Ala
	290					295					300				
Phe	Val	Val	Ile	Leu	Tyr	Ile	Trp	Leu	Leu	Val	Arg	Thr	Gly	Arg	Ile
305				310						315					320
Ala	Gln	Lys	Cys	Glu	Arg	Thr	Phe	Pro	Ala	Phe	Leu	Val	Met	Gly	Ile
			325						330					335	

Ala Leu Met Leu Val Ser Gln Ala Ile Leu Asn Met Met Val Ala Val  
 340 345 350  
 Gly Leu Phe Pro Val Thr Gly Gln Pro Leu Pro Leu Ile Ser Lys Gly  
 355 360 365  
 Gly Thr Ser Thr Leu Ile Asn Cys Ala Tyr Ile Gly Met Ile Leu Ser  
 370 375 380  
 Val Ser Arg Tyr Thr Ala Tyr Leu Glu Glu Lys Lys Glu Asn Pro Ala  
 385 390 395 400  
 Pro Leu Leu Thr Gln Ser Glu Gly Asn Glu Ala Ile Ala Ser Glu Ala  
 405 410 415  
 Gln Thr Ala Ala Glu Pro Thr Ala Glu Val Leu Asn Ser Asp Ala Lys  
 420 425 430  
 Phe Glu Glu  
 435

&lt;210&gt; 6542

&lt;211&gt; 135

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6542

Lys Arg Leu Ala Arg Val Arg Gly Ile Asp Phe Ile His Asp Ser Lys  
 1 5 10 15  
 Ala Pro Asn Val Asn Ser Cys Trp Tyr Ala Leu Gln Ser Met Thr Thr  
 20 25 30  
 Lys Thr Val Leu Ile Leu Gly Gly Lys Asp Lys Gly Asn Asp Tyr Thr  
 35 40 45  
 Glu Ile Glu Glu Leu Val Arg Glu Lys Cys Ser Ala Leu Val Tyr Leu  
 50 55 60  
 Gly Leu His Asn Glu Lys Leu His Glu Phe Phe Asp Arg Leu Gly Leu  
 65 70 75 80  
 Pro Val Ala Glu Val Gln Thr Gly Met Lys Asp Ala Val Glu Ala Ala  
 85 90 95  
 Tyr Lys Leu Ala Lys Lys Gly Glu Thr Val Leu Leu Ser Pro Cys Cys  
 100 105 110  
 Ala Ser Phe Asp Leu Phe Lys Ser Tyr Glu Asp Arg Gly Glu Gln Phe  
 115 120 125  
 Lys Lys Tyr Val Arg Glu Leu  
 130 135

&lt;210&gt; 6543

&lt;211&gt; 66

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6543

Val Gly His Leu His Gln Gln Ala Cys Leu Arg Asn Lys Ile Tyr Asn  
 1 5 10 15  
 Arg Leu Tyr Ile Ile Leu Glu Ala Gly Leu Phe Ser Ser Ala Phe Tyr  
 20 25 30  
 Ala Phe Asn Tyr Pro Val Gly Phe Ile Phe Asn Ser Ser Phe Phe Thr  
 35 40 45  
 Leu His Ser Ser Leu Thr Gln Ile Phe Ser Leu Tyr Leu Leu Cys Tyr  
 50 55 60  
 Tyr Asn  
 65

&lt;210&gt; 6544

&lt;211&gt; 181

<212> PRT  
 <213> B.fragilis

<400> 6544

Gln Trp Ser Tyr His Ile Leu Ile Lys Val Lys Tyr Arg Ile Ile Asn  
 1 5 10 15  
 Pro Asp Leu Pro Ile Val Asn Arg Lys Ser Leu Asn His Asn Asn Ile  
 20 25 30  
 Met Asp Leu Phe Glu Arg Val Ser Glu Asp Ile Lys Asn Ala Met Lys  
 35 40 45  
 Ala Lys Asp Lys Val Ala Leu Glu Thr Leu Arg Asn Val Lys Lys Phe  
 50 55 60  
 Phe Leu Glu Ala Lys Thr Ala Pro Gly Ala Asn Asp Thr Leu Thr Asp  
 65 70 75 80  
 Ala Asp Ala Leu Lys Ile Val Gln Lys Leu Val Lys Gln Gly Lys Asp  
 85 90 95  
 Ala Ala Glu Ile Tyr Ile Gly Gln Gly Arg Gln Asp Leu Ala Asp Ala  
 100 105 110  
 Glu Leu Ala Gln Val Gln Val Met Glu Thr Tyr Leu Pro Lys Gln Met  
 115 120 125  
 Ser Ala Glu Glu Leu Glu Ala Ala Leu Lys Glu Ile Ile Ala Glu Val  
 130 135 140  
 Gly Ala Thr Ser Gly Lys Asp Met Gly Lys Val Met Gly Val Ala Ser  
 145 150 155 160  
 Lys Lys Leu Ala Gly Leu Ala Glu Gly Arg Ala Ile Ser Ala Lys Val  
 165 170 175  
 Lys Glu Leu Leu Gly  
 180

<210> 6545  
 <211> 67  
 <212> PRT  
 <213> B.fragilis

<400> 6545

Arg Thr Ser Tyr Thr Arg Tyr Phe Lys Ala Met Cys Gln Ser Val Val  
 1 5 10 15  
 Asn Lys Asn Thr Ala Arg Lys Gly Lys Asn Leu Gly Phe Val Leu Lys  
 20 25 30  
 Pro Ser Glu Arg Gly Gly Glu Asp Lys Ala Val Ile Val Pro Leu Lys  
 35 40 45  
 Leu Arg Thr Val Phe Leu Thr Leu Phe Val Lys Leu Phe His Ala Glu  
 50 55 60  
 Thr Leu Ser  
 65

<210> 6546  
 <211> 343  
 <212> PRT  
 <213> B.fragilis

<400> 6546

Asp Arg Asn Leu Gly Glu Arg Thr Cys Gly Glu Thr Leu Tyr Gly Thr  
 1 5 10 15  
 Arg Ser Ile Arg Ser Ser Leu Gly Arg Asp Tyr Glu Arg Arg Thr Glu  
 20 25 30  
 Asn Asn Glu Gln Arg Ala Lys Met Lys Glu Glu Glu Thr Thr Tyr His  
 35 40 45  
 Val Pro Val Leu Leu Lys Glu Ser Val Asp Ala Met Asn Ile Ser Pro

50	55	60
Asp Gly Thr Tyr Val	Asp Val Thr Phe Gly	Gly Gly His Ser Arg
65	70	75
Glu Ile Leu Ser Arg	Leu Gly Asp Gly	Arg Leu Leu Gly Phe Asp
85	90	95
Gln Asp Glu Asp Ala	Glu Arg Asn Ile Val	Asn Asp Pro His Phe Thr
100	105	110
Phe Val Arg Ser Asn	Phe Arg Tyr Leu His	Asn Phe Leu Arg Tyr His
115	120	125
Asp Ile Gly Glu Val	Asp Ala Ile Leu Ala	Asp Leu Gly Val Ser Ser
130	135	140
His His Phe Asp Asp	Ser Glu Arg Gly Phe	Ser Phe Arg Phe Asp Gly
145	150	155
Lys Leu Asp Met Arg	Met Asn Lys Arg Ala	Gly Ile Thr Ala Ala Asp
165	170	175
Val Val Asn Thr Tyr	Glu Glu Glu Arg Leu	Ala Asp Ile Phe Tyr Leu
180	185	190
Tyr Gly Glu Leu Lys	Asn Ser Arg Lys Leu	Ala Ser Val Ile Val Lys
195	200	205
Ala Arg Thr Gly Gln	Lys Ile Glu Thr Ile	Gly Glu Phe Leu Glu Ile
210	215	220
Ile Lys Pro Leu Phe	Gly Arg Glu Arg Glu	Lys Lys Glu Leu Ala Lys
225	230	235
Val Phe Gln Ala Leu	Arg Ile Glu Val Asn	Gln Glu Met Glu Ala Leu
245	250	255
Lys Glu Met Leu Met	Ala Ala Thr Glu Ala	Leu Lys Pro Gly Gly Arg
260	265	270
Leu Val Val Ile Thr	Tyr His Ser Leu Glu	Asp Arg Met Val Lys Asn
275	280	285
Ile Met Lys Thr Gly	Asn Val Glu Gly Lys	Ala Thr Gln Asp Phe Phe
290	295	300
Gly Asn Leu Gln Thr	Pro Phe Arg Leu Val	Asn Asn Lys Val Ile Val
305	310	315
Pro Asp Glu Asp Glu	Ile Thr Arg Asn Pro	Arg Ser Arg Ser Ala Lys
325	330	335
Leu Arg Ile Ala Glu	Lys Lys	
340		

&lt;210&gt; 6547

&lt;211&gt; 180

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6547

Ser Gln Asn Leu Ile	Ile Ile Asn Gly	Phe Gly Lys Asp	Thr Val Ile
1	5	10	15
Gly Pro Glu Leu Leu	Phe Gly Ser Cys	Val Val Arg Tyr	Ser Tyr Phe
20	25	30	
Phe Asn Gly Ile Lys	Arg Phe Thr Asp	Phe Ile Phe Leu	Leu Ile Asp
35	40	45	
Phe Thr Val Ala Glu	Tyr Leu Gly Ser	His Val Cys Arg	Gln Cys Ile
50	55	60	
His Thr Gly His Thr	Tyr Thr Val Lys	Thr Ser Gly Tyr	Phe Val Arg
65	70	75	80
Thr Phe Ile Glu Leu	Thr Ser Gly Met	Gln Tyr Gly His	Gly Asn Phe
85	90	95	
Glu Gly Arg Phe Leu	Leu Phe Phe Val	Glu Ile Tyr Arg	Asn Thr Thr
100	105	110	
Ser Ile Ile Leu Tyr	Gly Asp Arg Val	Val Phe Val Asp	Ser Tyr Phe

115	120	125
Asp Met Val Ala Ile Thr Gly Gln Cys Phe Val Asp Arg Val Val Asp		
130	135	140
Asn Phe Ile Tyr Gln Val Met Lys Ser Leu Tyr Ala Asp Val Thr Asn		
145	150	155
Val His Arg Arg Ala Phe Ser Asn Cys Phe Lys Ser Phe Gln Tyr Leu		
165	170	175
Asp Thr Ile Cys		
180		

&lt;210&gt; 6548

&lt;211&gt; 442

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6548

Phe Ile Ile Gln Tyr Asn Met Asp Glu Ile Val Gln Phe Asp Phe Pro		
1	5	10
Thr Asp Ser Pro Lys Ile Ile Lys Val Ile Gly Val Gly Gly Gly Gly		
20	25	30
Gly Asn Ala Val Asn His Met Tyr Arg Glu Gly Ile His Asp Val Thr		
35	40	45
Phe Val Leu Cys Asn Thr Asp Asn Gln Ala Leu Ala Glu Ser Pro Val		
50	55	60
Pro Val Lys Leu Gln Leu Gly Arg Ser Ile Thr Gln Gly Leu Gly Ala		
65	70	75
Gly Asn Arg Pro Glu Arg Ala Arg Asp Ala Ala Glu Glu Ser Ile Glu		
85	90	95
Asp Ile Lys Thr Leu Leu Asn Asp Gly Thr Lys Met Val Phe Ile Thr		
100	105	110
Ala Gly Met Gly Gly Gly Thr Gly Thr Gly Ala Ala Pro Val Ile Ala		
115	120	125
Arg Ile Ala Lys Glu Met Asp Ile Leu Thr Val Gly Ile Val Thr Ile		
130	135	140
Pro Phe Ile Phe Glu Gly Glu Lys Lys Ile Ile Gln Ala Leu Asp Gly		
145	150	155
Val Glu Arg Ile Ala Gln His Val Asp Ala Leu Leu Val Ile Asn Asn		
165	170	175
Glu Arg Leu Arg Glu Ile Tyr Ser Asp Leu Thr Phe Met Asn Ala Phe		
180	185	190
Gly Lys Ala Asp Asp Thr Leu Ser Ile Ala Ala Lys Ser Ile Ala Glu		
195	200	205
Ile Ile Thr Met Arg Gly Thr Val Asn Leu Asp Phe Ala Asp Val Lys		
210	215	220
Thr Ile Leu Lys Asp Gly Gly Val Ala Ile Met Ser Thr Gly Phe Gly		
225	230	235
Glu Gly Glu Asn Arg Val Thr Lys Ala Ile Asp Asp Ala Leu His Ser		
245	250	255
Pro Leu Leu Asn Asn Asn Asp Ile Phe Asn Ala Lys Lys Val Met Leu		
260	265	270
Asn Val Ser Phe Cys Pro Ala Ser Glu Leu Met Met Glu Glu Met Asn		
275	280	285
Glu Val His Glu Phe Met Ser Lys Phe Arg Glu Gly Val Glu Val Ile		
290	295	300
Trp Gly Val Ala Met Asp Asn Ser Leu Asp Thr Lys Val Lys Ile Thr		
305	310	315
Val Leu Ala Thr Gly Phe Gly Val Glu Asp Val Pro Gly Met Asp Asp		
325	330	335
Leu His Glu Lys Arg Ser Gln Glu Glu Glu Glu Arg Gln Leu Gln Leu		

			340					345					350				
Glu	Glu	Glu	Lys	Glu	Lys	Asn	Lys	Glu	Arg	Ile	Arg	Lys	Ala	Tyr	Gly		
			355					360					365				
Glu	Ser	Ala	Ser	Gly	Ile	Gly	Thr	Arg	Asn	Leu	Arg	Lys	Arg	Arg	His		
			370					375					380				
Ile	Tyr	Leu	Phe	Asn	Ala	Glu	Asp	Leu	Asp	Asn	Asp	Asp	Ile	Ile	Ala		
			385					390					395			400	
Met	Val	Glu	Asp	Ser	Pro	Thr	Tyr	Leu	Arg	Asp	Lys	Thr	Thr	Leu	Gly		
				405						410					415		
Lys	Ile	Lys	Ala	Lys	Ala	Ala	Leu	Glu	Glu	Glu	Ile	Ala	Thr	Glu	Glu		
			420					425					430				
Ala	Ile	Asp	Asp	Ser	Gly	Val	Ile	Thr	Phe								
			435					440									

<210> 6549  
 <211> 171  
 <212> PRT  
 <213> B.fragilis

Lys	Phe	Ile	Lys	Met	Lys	Thr	Lys	Asn	Tyr	Leu	Ser	Ile	Ile	Ser	Ile		
1			5					10					15				
Leu	Phe	Phe	Ser	Phe	Leu	Phe	Val	Ser	Cys	Ser	Lys	Glu	Asp	Glu	Gly		
			20					25					30				
Asp	Thr	Ile	Lys	Pro	Val	Ile	Asp	Leu	Leu	Glu	Pro	Glu	Glu	Gly	Ala		
			35					40				45					
Ile	Leu	Arg	Ile	Gly	Ser	Ser	His	Gly	Val	His	Phe	Glu	Met	Asn	Leu		
			50				55				60						
His	Asp	Asn	Glu	Ala	Ile	Ala	Ser	Tyr	Lys	Ile	Asn	Ile	His	Asn	Asn		
			65			70				75				80			
Phe	Asp	Gly	His	Ser	His	Thr	Arg	Ala	Ser	Glu	Ala	Gly	Val	Thr	Lys		
			85					90					95				
Pro	Phe	Thr	Phe	Glu	Arg	Thr	Tyr	Thr	Asp	Lys	Ala	Gly	Gln	Lys	Asp		
			100					105					110				
Ala	His	Val	His	Asn	His	Asp	Ile	Lys	Ile	Pro	Ala	Asp	Ala	Thr	Pro		
			115				120					125					
Gly	Asn	Tyr	His	Leu	Met	Val	Tyr	Cys	Leu	Asp	Gln	Ser	Gly	Asn	Glu		
			130				135				140						
Thr	Tyr	Val	Val	Arg	Asn	Ile	Val	Leu	Ser	Val	Glu	Gly	Gly	Glu	Glu		
			145			150				155					160		
Gly	Glu	His	His	His	Asp	Glu	His	His	His	Asp							
			165					170									

<210> 6550  
 <211> 328  
 <212> PRT  
 <213> B.fragilis

Arg	Leu	Asp	Asn	Arg	Ser	Asp	Glu	Gln	Gln	Ala	Met	Ser	Tyr	Lys	Cys		
1			5					10					15				
Leu	Pro	Leu	Ile	Thr	Lys	Tyr	Glu	Pro	Lys	Thr	Cys	Ser	Ile	Lys	Lys		
			20					25					30				
Lys	Ile	Tyr	Arg	Arg	Ile	Asp	Lys	Phe	Arg	Leu	Ile	Asn	Arg	Asn	Leu		
			35				40					45					
Lys	Ile	Met	Lys	Arg	Ile	Val	Val	Leu	Gly	Ala	Gly	Glu	Ser	Gly	Ala		
			50			55				60							
Gly	Ala	Ala	Val	Leu	Ala	Lys	Val	Lys	Gly	Phe	Asp	Thr	Phe	Val	Ser		
			65			70				75					80		

Asp Met Ser Ala Ile Lys Asp Lys Tyr Lys Thr Leu Leu Asp Gly His  
 85 90 95  
 Gly Ile Ala Trp Glu Glu Gly Arg His Thr Glu Glu Gln Ile Leu Asn  
 100 105 110  
 Ala Asp Glu Val Val Lys Ser Pro Gly Ile Pro Asn Asp Ala Pro Leu  
 115 120 125  
 Ile Leu Lys Leu Arg Glu Gln Gly Thr Pro Ile Ile Ser Glu Ile Glu  
 130 135 140  
 Phe Ala Gly Arg Tyr Thr Asp Ala Lys Met Ile Cys Ile Thr Gly Ser  
 145 150 155 160  
 Asn Gly Lys Thr Thr Thr Thr Ser Leu Ile Tyr His Ile Phe Lys Ser  
 165 170 175  
 Ala Gly Leu Asn Val Gly Leu Ala Gly Asn Ile Gly Lys Ser Leu Ala  
 180 185 190  
 Leu Gln Val Ala Glu Glu Lys His Asp Tyr Tyr Val Ile Glu Leu Ser  
 195 200 205  
 Ser Phe Gln Leu Asp Asn Met Tyr Asn Phe Arg Ala Asp Ile Ala Val  
 210 215 220  
 Leu Met Asn Ile Thr Pro Asp His Leu Asp Arg Tyr Asp His Cys Met  
 225 230 235 240  
 Gln Asn Tyr Ile Asn Ala Lys Phe Arg Ile Thr Gln Asn Gln Thr Ser  
 245 250 255  
 Glu Asp Ala Phe Ile Phe Trp Asn Asp Asp Pro Ile Ile Lys Arg Glu  
 260 265 270  
 Leu Asp Lys His Gly Ile Arg Ala His Leu Tyr Pro Phe Leu Gly Ile  
 275 280 285  
 Lys Glu Glu Arg Ser Ile Ala Tyr Val Glu Asp His Glu Val Val Ile  
 290 295 300  
 Thr Asp Pro Ile Ala Ile Asn Met Glu Gln Glu Gln Val Ala Leu Thr  
 305 310 315 320  
 Gly Gln His Asn Leu Ile Thr Leu  
 325

&lt;210&gt; 6551

&lt;211&gt; 452

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6551

Ile Met Cys Lys Tyr Gln Ile Val Lys Ile Met Met Asp Trp Lys Arg  
 1 5 10 15  
 Leu Ile Ser Ala Lys Arg Phe Gly Met Glu Glu Phe His Glu Glu Arg  
 20 25 30  
 Gln Glu Asn Arg Ser Glu Phe Gln Arg Asp Tyr Asp Arg Leu Val Phe  
 35 40 45  
 Ser Ala Pro Phe Arg Arg Leu Gln Asn Lys Thr Gln Val Phe Pro Leu  
 50 55 60  
 Pro Gly Ser Ile Phe Val His Asn Arg Leu Thr His Ser Leu Glu Val  
 65 70 75 80  
 Ser Cys Val Gly Arg Ser Leu Gly Asn Asp Val Ser Lys Ala Ile Leu  
 85 90 95  
 Ala Arg Gln Pro Glu Leu Gln Asp Ser Phe Leu Pro Glu Ile Gly Ser  
 100 105 110  
 Ile Val Ser Ala Ala Cys Leu Ala His Asp Leu Gly Asn Pro Pro Phe  
 115 120 125  
 Gly His Ser Gly Glu Lys Ala Ile Ser Thr Phe Phe Ser Glu Gly Lys  
 130 135 140  
 Gly Val Gln Leu Gln Glu Lys Leu Ser Pro Met Glu Trp Asn Asp Leu  
 145 150 155 160



Thr His Phe Glu Gly Asn Ala Asn Ala Phe Arg Leu Leu Thr His Gln  
 165 170 175  
 Phe Glu Gly Arg Arg Lys Gly Gly Phe Val Leu Thr Tyr Ser Thr Leu  
 180 185 190  
 Ala Ser Ile Val Lys Tyr Pro Phe Ser Ser Ser Leu Ala Gly Asn Lys  
 195 200 205  
 Ser Lys Phe Gly Phe Phe Thr Thr Glu Glu Glu Gly Phe Arg Arg Ile  
 210 215 220  
 Ala Thr Glu Leu Gly Leu Ile Gln Leu Ser Asp Arg Pro Leu Lys Tyr  
 225 230 235 240  
 Ala Arg His Pro Leu Val Tyr Leu Val Glu Ala Ala Asp Asp Ile Cys  
 245 250 255  
 Tyr Gln Met Met Asp Ile Glu Asp Ala His Lys Leu Lys Ile Leu Thr  
 260 265 270  
 Thr Glu Glu Thr Lys Glu Leu Leu Leu Ala Tyr Phe Ala Asp Glu Arg  
 275 280 285  
 Gln Thr His Ile Arg Lys Thr Phe Asp Ile Val Lys Asp Thr Asn Glu  
 290 295 300  
 Gln Ile Ala Tyr Leu Arg Ser Ser Val Ile Gly Leu Leu Ile Lys Glu  
 305 310 315 320  
 Cys Thr Gln Val Phe Leu Asn Asn Glu Thr Glu Ile Leu Ser Gly Thr  
 325 330 335  
 Phe Glu Gly Ala Leu Ile Lys His Ile Ser Glu Arg Pro Gly Lys Ala  
 340 345 350  
 Tyr Lys His Cys Ser Glu Val Ser Phe Ser Lys Ile Tyr Arg Ser Arg  
 355 360 365  
 Asp Val Leu Asp Ile Glu Leu Ala Gly Phe Arg Val Ile Asn Thr Leu  
 370 375 380  
 Leu Glu Leu Met Ile Asp Ala Val Thr Ser Pro Glu Lys Ala Tyr Ser  
 385 390 395 400  
 Gln Leu Leu Ile Asn Arg Val Ser Gly Gln Tyr Asn Ile Lys Ala Pro  
 405 410 415  
 Ala Leu Tyr Glu Arg Val Gln Ala Val Leu Asp Tyr Ile Ser Gly Met  
 420 425 430  
 Thr Asp Val Phe Ala Leu Asp Leu Tyr Arg Lys Ile Asn Gly Asn Ser  
 435 440 445  
 Leu Pro Ala Val  
 450

&lt;210&gt; 6552

&lt;211&gt; 61

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6552

Phe Gln Lys Lys Pro Tyr Leu Cys Thr Arg Asn Arg Glu Thr Thr Ile  
 1 5 10 15  
 Gln Asn Glu Ser Lys Val Lys Gln Lys Glu Gln Lys Cys Ser Lys Gln  
 20 25 30  
 Asp Gly Pro Phe Val Tyr Arg Leu Gly Arg Lys Ile Phe Ile Leu Glu  
 35 40 45  
 Arg Gly Val Arg Phe Pro His Gly Leu Gln Leu Lys Lys  
 50 55 60

&lt;210&gt; 6553

&lt;211&gt; 208

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

Met	Lys	Lys	Lys	Tyr	Leu	Val	Ile	Val	Leu	Leu	Phe	Leu	Val	Ala	Asn
1				5					10					15	
Thr	Cys	Tyr	Ile	Tyr	His	Gln	His	Val	Gly	Leu	Lys	Lys	Val	His	Ser
			20					25					30		
Phe	Leu	Ser	Glu	Leu	Arg	Gln	Asp	Thr	Gly	Glu	Arg	Leu	Gly	Ile	Leu
		35					40					45			
Glu	Met	Gln	Lys	Glu	Asp	Arg	Val	Tyr	Glu	Ile	Gln	Phe	Asn	Gly	Gln
	50					55					60				
Leu	Ile	Asp	Lys	Glu	Leu	Thr	Val	Ile	Asp	Thr	Asp	Gly	Lys	Gln	Lys
65				70						75					80
Lys	Ile	Gly	Asp	Leu	Ile	Ile	Asp	Asn	Pro	Lys	Leu	Val	Phe	Arg	Phe
			85						90					95	
Ser	Glu	Leu	Asn	Cys	Asp	Lys	Cys	Ile	Asp	Ala	Gln	Ile	Arg	Asn	Leu
			100					105					110		
Asn	Glu	Tyr	Val	Asp	Ser	Ile	Glu	Leu	Gln	Asn	Ile	Ile	Leu	Leu	Thr
		115					120					125			
Asp	Phe	Gln	Ser	Leu	Glu	Tyr	Met	Arg	Ser	Phe	Gln	Lys	Ser	Asn	Lys
	130					135					140				
Val	Lys	Phe	Ala	Ile	Tyr	Asn	Met	Glu	Ala	Glu	Ile	Asp	Ser	Val	Leu
145				150						155					160
Val	Asn	Ile	Asp	Leu	Pro	Tyr	Phe	Phe	Val	Leu	Thr	Pro	Gln	Glu	Glu
			165						170					175	
Arg	Ile	Gln	Cys	Met	Tyr	Ile	Pro	His	Lys	Glu	Ile	Pro	Phe	Leu	Thr
		180						185					190		
Glu	Val	Tyr	Leu	Ser	Ser	Val	Lys	Arg	Lys	Phe	Phe	Thr	Asp	Leu	Glu
		195					200					205			

<213> B.fragilis

Gly	Trp	Cys	Leu	Tyr	Tyr	Glu	Leu	Cys	Ile	Asp	Ile	Cys	Ile	Arg	Cys
1				5					10					15	
Ile	Leu	Phe	Asn	Glu	Leu	Ala	Ala	Trp	Thr	Tyr	Val	Phe	Thr	His	Gln
			20					25					30		
His	Gly	Glu	Asp	Ile	Val	Gly	Phe	Cys	Cys	Val	Val	Asp	Ile	Asn	Leu
		35				40						45			
Phe	Gln	His	Thr	Val	Phe	Arg	Ile	His	Ser	Arg	Phe	Pro	Gln	Leu	Leu
	50					55					60				
Gly	Ile	His	Leu	Thr	Gln	Thr	Phe	Val	Ala	Leu	Cys	Met	Asp	Cys	Ile
65					70					75				80	
Phe	Arg	Thr	Ala	Thr	Ile	Ser	Val	Asp	Lys	Leu	Leu	Ala	Leu	Arg	Ile
				85				90						95	
Cys	Pro	Ala	Ile	Leu	Phe	Tyr	Phe	Ser	Phe	Phe	Ala	Lys	Val	Glu	Arg
		100						105					110		
Gly	Ser	Gly	Asn	Val	Gln	Ile	Ala	Ile	Leu	Asp	Asp	Leu	Trp	His	Ile
		115					120					125			
Ala	Glu	Glu	Lys	Ser	His	Asp	Gln	Cys	Val	Asp	Val				
	130					135					140				

<213> B.fragilis

<400> 6555

Met Gly Val Lys Arg Asn Thr Arg His Arg Ile Trp Leu Ala Trp Met  
 1 5 10 15  
 Leu Leu Met Thr Phe Met Pro Leu Ser Val Val Lys Val Phe His Asn  
 20 25 30  
 His Ser Glu Glu Thr Ser Ile Thr Cys Thr Asp Ala His Ser Gly Lys  
 35 40 45  
 Ser His His Thr Cys Glu Thr Cys Pro Ile Cys Gln Phe Met Leu Ser  
 50 55 60  
 Pro Phe Ile Glu Thr Pro Ser Thr Leu Leu Thr Tyr Thr Pro Leu Tyr  
 65 70 75 80  
 Val Lys Trp Glu Ser Gly Thr Phe Gln Asp Lys Lys Leu Ser Ile Ala  
 85 90 95  
 Phe Tyr Pro His Tyr Leu Arg Gly Pro Pro Pro Val Phe Tyr His Ile  
 100 105 110  
 Val

&lt;210&gt; 6556

&lt;211&gt; 880

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6556

His Thr Val Asp Pro Ser Ser Pro Val Val Lys Thr His Asn Leu Ser  
 1 5 10 15  
 Leu Glu Glu Val Ala Val Tyr Ala Tyr Arg Asn Lys Ala Gly Lys Ala  
 20 25 30  
 Asn Trp Glu Val Thr Arg Ala Ser Ala Asp Thr Ile Pro Ala Asp Thr  
 35 40 45  
 Ala Ser Thr Asp Phe Asn Ser Glu Ile Asp Ile Arg Asn Ile Glu Leu  
 50 55 60  
 Lys His Ala Asn Leu Val Phe Asp Asp Arg Asn Thr Asp Ile Tyr Ser  
 65 70 75 80  
 Arg Ile Asp Asp Ala Asn Leu Lys Leu Arg Leu Ser Leu Thr Lys Gly  
 85 90 95  
 Ile Ser Thr Leu Gly Leu Lys Phe Asp Asn Lys Asn Ile Leu Phe Trp  
 100 105 110  
 Gln Gln Gly Glu Leu Leu Val Asn Lys Ile Ala Thr Ser Leu Arg Thr  
 115 120 125  
 Asp Ile Met Val Asp Arg Gln Thr Ala Val Trp Lys Leu Lys Asp Thr  
 130 135 140  
 Glu Leu Asp Val Asn Gly Ile Arg Leu Asp Val Asn Gly Ala Phe Arg  
 145 150 155 160  
 Arg Asp Thr Val Ala Lys Thr Ile Gly Met Asp Leu Glu Tyr Gly Leu  
 165 170 175  
 His Ala Pro Ser Met Glu Thr Val Leu Arg Met Ile Pro Lys Ser Tyr  
 180 185 190  
 Val Lys Asp Thr Lys Val Ser Ala Lys Gly Glu Val Thr Val Ser Gly  
 195 200 205  
 Arg Val Arg Gly Val Tyr Gly Asp Lys Lys Leu Pro Ala Val Ser Leu  
 210 215 220  
 Lys Ile Gly Ile Lys Glu Ala Ser Ala Gln Tyr Lys Gly Leu Pro Tyr  
 225 230 235 240  
 Gly Ile Asp Glu Val Thr Ala Asp Phe Asp Ala Tyr Val Asp Leu Met  
 245 250 255  
 Arg His Gln Pro Ser Tyr Leu Asn Leu Lys Ile Phe His Phe Lys Gly  
 260 265 270  
 Ala His Thr Glu Val Leu Ala Asp Ala Lys Val Asp Asp Leu Leu Asp  
 275 280 285

Asp Pro Leu Ile Thr Phe His Thr Lys Ser Thr Val Asp Leu Asp Ala  
 290 295 300  
 Leu Ala Lys Thr Phe Pro Leu Gln Glu Ser Val Thr Ile Thr Gly Lys  
 305 310 315 320  
 Leu Asp Ala Asp Met Gly Met Lys Cys Arg Leu Ser Ala Leu Lys Lys  
 325 330 335  
 Gln Asp Ile Gly Arg Met Lys Leu Gly Lys Leu Glu Leu Lys Asp  
 340 345 350  
 Phe Glu Leu Lys Asp Thr Ala Lys Asp Phe Asp Phe Leu Gly Asn Ala  
 355 360 365  
 Thr Phe Arg Phe Arg Asp Asn Glu Thr Leu Gln Ala Gln Met Asp Val  
 370 375 380  
 Arg Lys Leu Val Leu Arg Ser Arg Phe Leu Ser Ser Asp Ile Glu Arg  
 385 390 395 400  
 Leu Val Ala Asn Val Ser Ser Thr Asn Pro Gln Asp Thr Asn Arg Ile  
 405 410 415  
 Val Ser Leu Gln Cys Asp Met Glu Val Ser Lys Leu Arg Ala Ser Met  
 420 425 430  
 Gly Asp Ser Ile Lys Leu Tyr Ser Ala Arg Ala Lys Ala Gln Ala Ala  
 435 440 445  
 Leu Gly Pro Gln Gly Val Asp Val Thr Lys Pro Ala Ile Asp Phe Ser  
 450 455 460  
 Leu Arg Ala Asp Ser Leu Phe Phe Ser Ala Ala Gly Thr Arg Met Ala  
 465 470 475 480  
 Met Asn Val Ala Gly Ile Lys Met Lys Ala Asp Lys Leu Asn Asp Ser  
 485 490 495  
 Leu Trp Met Pro Lys Gly Ile Val Gly Phe Asn Arg Leu Arg Phe Arg  
 500 505 510  
 Thr Pro Glu Phe Gly Leu Pro Ile Arg Met Ser Lys Thr Ala Val Thr  
 515 520 525  
 Val Asp Gly Pro Lys Ile Thr Leu Lys Asn Ala Ser Val Arg Ile Gly  
 530 535 540  
 Arg Ser Asn Met Thr Ala Thr Gly Asp Met Met Gly Val Tyr Arg Ala  
 545 550 555 560  
 Met Thr Lys Gly Glu Lys Leu Thr Ala His Leu Ser Leu Thr Ser Asp  
 565 570 575  
 Leu Ile Asp Cys Asn Gln Leu Ile Asn Ser Leu Ser Phe Pro Glu Asp  
 580 585 590  
 Thr Thr Glu Val Leu Thr Asp Ser Val Pro Ser Glu Met Lys Leu Phe  
 595 600 605  
 Val Ile Pro Arg Asn Ile Asp Phe Glu Leu Gln Thr Asp Leu Lys Lys  
 610 615 620  
 Val Ile Phe Glu Lys Met Leu Phe Glu Asn Val His Gly Ala Val Asp  
 625 630 635 640  
 Ile Lys Asn Gln Ala Ile His Leu Glu Asp Leu Ser Met Arg Ala Leu  
 645 650 655  
 Asp Ala Asp Met Lys Ala Val Met Val Tyr Lys Ala Gly Ser Pro Arg  
 660 665 670  
 Gly Gly Tyr Ala Gly Phe Asp Phe Lys Ile Arg Asn Ile Asn Ile Ala  
 675 680 685  
 Lys Leu Val Asp Phe Val Pro Ala Leu Asp Thr Ile Val Pro Met Leu  
 690 695 700  
 Arg Ser Phe Lys Gly Arg Val Met Phe Asp Val Ala Ala Asp Ala Arg  
 705 710 715 720  
 Leu Asp Ser Ala Met Asn Ile Arg Ile Pro Thr Leu Arg Ser Ala Ile  
 725 730 735  
 His Ile Lys Gly Asp Ser Leu Val Leu Met Asp Gly Glu Thr Phe Ala  
 740 745 750  
 Glu Ile Ser Lys Met Leu Met Phe Lys Asn Lys Lys Glu Asn Val Phe

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65  
66  
67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82  
83  
84  
85  
86  
87  
88  
89  
90  
91  
92  
93  
94  
95  
96  
97  
98  
99  
100

755	760	765
Asp Ser Ile Ser Val Asn Val Thr Val His Asp Gly Asn Val Thr Val		
770	775	780
Tyr Pro Phe Leu Val Glu Ile Asp Arg Tyr Lys Ala Ala Val Gly Gly		
785	790	795
Glu Gln Gly Leu Asp Met Asn Phe Asn Tyr His Ile Ser Ile Leu Lys		800
	805	810
Ser Pro Leu Pro Phe Lys Ala Gly Val Asn Ile Ser Gly Asn Leu Asp		815
	820	825
Lys Met Lys Phe Arg Ile Gly Lys Ala Lys Tyr Lys Asp Ala Val Thr		830
	835	840
Pro Ala Ala Val His Arg Val Asp Ser Thr Arg Met Asn Met Gly Asn		845
	850	855
Glu Ile Val Asn Arg Phe Arg Arg Val Val Leu Gly Arg Gln Pro Arg		860
865	870	875
		880

<210> 6557  
 <211> 217  
 <212> PRT  
 <213> B.fragilis

<400> 6557

Lys Gln Ser Leu Asn Tyr Asn Trp Thr Leu Phe Met Arg Phe Gln Val		
1	5	10
Arg Ser Ile Leu Leu Phe Val Leu Leu Leu Ile Ile Phe Leu Gln Gln		15
	20	25
Thr Ile Ala Met Asn Val Leu Arg Asn Trp Leu Tyr Leu Phe Pro Ile		30
	35	40
Ser Leu Leu Met Ile Leu Leu Phe Ser Cys Asn Gln Ile Lys Glu Tyr		45
	50	55
Asp Ala Lys Glu Arg Thr Ser Arg Asn Thr Arg Val Gln His Leu Ile		60
65	70	75
Glu Lys Asp Ile Thr Trp Leu Val Gly Lys Lys Leu Asn Ser Val Asp		80
	85	90
Ser Ile Leu Pro Asn Glu Leu Leu His Glu Lys Val Leu Phe Leu Phe		95
	100	105
Asn Tyr His Asp Cys Gly Thr Cys Ile Lys Thr Gly Phe Ala Val Val		110
	115	120
Asn Ser Ile Asp Arg Gln Lys Gly Lys Glu Tyr Val Lys Val Ile Gly		125
	130	135
Ser Met Ile Ser Asp Leu Thr Ser Val Gln Arg Phe Asn Glu Tyr His		140
145	150	155
Gly Tyr Ile Tyr Val Asp Thr Lys Asp Leu Ile Arg Arg Glu Leu Lys		160
	165	170
Tyr Ala Pro Thr Pro Met Leu Leu Arg Val Asp Thr Asp Asn Arg Ile		175
	180	185
Leu Glu Ala Leu Ile Pro Thr Thr Glu Met Asp Asn Gln Thr Ile Lys		190
	195	200
Met Phe Ile Ala Ser Cys Leu Lys Arg		205
	210	215

<210> 6558  
 <211> 347  
 <212> PRT  
 <213> B.fragilis

<400> 6558

Gln Ile Lys Glu Gln Leu Leu Thr Lys Tyr Met Glu Glu Val Ile Glu
1
5
10
15

Pro Val Ser Lys Glu Leu Ile Ile Ala Glu Leu Thr Glu Asp Lys Arg  
 20 25 30  
 Leu Arg Met Thr Asn Lys Ser Asn Asn Gln Ile Tyr Ile Ile Thr Tyr  
 35 40 45  
 Gln Asp Ser Pro Asn Ile Met Arg Glu Ile Gly Arg Leu Arg Glu Ile  
 50 55 60  
 Ala Phe Arg Ala Ala Gly Gly Thr Gly Leu Ser Met Asp Ile Asp  
 65 70 75 80  
 Glu Tyr Asp Thr Met Glu Asn Pro Tyr Lys Gln Leu Ile Val Trp Asn  
 85 90 95  
 Pro Glu Ala Glu Glu Ile Leu Gly Gly Tyr Arg Tyr Ile Leu Gly Thr  
 100 105 110  
 Asp Val Arg Phe Asp Glu His Gly Ala Pro Val Leu Ala Thr Ser His  
 115 120 125  
 Met Phe Asn Phe Ser Asp Arg Phe Val Lys Glu Phe Leu Pro Thr Thr  
 130 135 140  
 Ile Glu Leu Gly Arg Ser Phe Val Thr Leu Glu Tyr Gln Ser Thr Arg  
 145 150 155 160  
 Ala Gly Ser Lys Gly Leu Phe Ala Leu Asp Asn Leu Trp Asp Gly Leu  
 165 170 175  
 Gly Ala Leu Thr Val Val Met Pro Asn Val Lys Tyr Phe Phe Gly Lys  
 180 185 190  
 Val Thr Met Tyr Pro Ser Tyr His Arg Gln Gly Arg Asp Met Ile Leu  
 195 200 205  
 Tyr Phe Leu Lys Lys His Phe Gly Asp Lys Asp Gly Leu Ile Thr Pro  
 210 215 220  
 Met Lys Pro Leu Glu Met Glu Thr Asp Glu Ala Glu Leu Ala Arg Ile  
 225 230 235 240  
 Phe Cys Lys Asp Ser Phe Lys Asp Asp Tyr Arg Ile Leu Asn Gly Glu  
 245 250 255  
 Ile Arg Lys Leu Gly Phe Asn Ile Pro Pro Leu Val Asn Ala Tyr Met  
 260 265 270  
 Ser Leu Ser Pro Thr Met Arg Met Phe Gly Thr Ala Ile Asn Tyr Gly  
 275 280 285  
 Phe Gly Asp Val Glu Glu Thr Gly Ile Leu Ile Ala Val Asp Glu Ile  
 290 295 300  
 Leu Glu Glu Lys Arg Met Arg His Ile Glu Ser Phe Val Lys Asn Asp  
 305 310 315 320  
 Pro Glu Asp Cys Gln Ile Thr Ser Gly Val Asn Lys Val Phe Thr Pro  
 325 330 335  
 Lys Val Val Thr Pro Gln Glu Asp Cys Ser Arg  
 340 345

&lt;210&gt; 6559

&lt;211&gt; 486

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6559

Gly Met Lys Leu Lys Glu Ile Leu Thr Ser Ile Gln Pro Val Lys Ile  
 1 5 10 15  
 Thr Gly Asn Gln Asp Ile Glu Ile Thr Gly Val Asp Ile Asp Ser Arg  
 20 25 30  
 Gln Val Glu Ser Gly His Leu Phe Met Ala Met Arg Gly Thr Gln Thr  
 35 40 45  
 Asp Gly His Ala Tyr Ile Pro Ala Ala Val Glu Lys Gly Ala Thr Ala  
 50 55 60  
 Ile Leu Cys Glu Glu Leu Pro Ala Glu Leu Val Glu Gly Val Thr Tyr  
 65 70 75 80

Ile	Gln	Val	Ala	Asp	Ser	Glu	Asp	Ala	Val	Gly	Lys	Ala	Ala	Thr	Thr
				85					90					95	
Phe	Tyr	Gly	Asn	Pro	Ser	Ser	Lys	Leu	Glu	Leu	Val	Gly	Val	Thr	Gly
			100					105					110		
Thr	Asn	Gly	Lys	Thr	Thr	Ile	Ala	Thr	Leu	Leu	Tyr	Asn	Thr	Phe	Arg
		115					120					125			
Tyr	Phe	Gly	Tyr	Lys	Val	Gly	Leu	Ile	Ser	Thr	Val	Cys	Asn	Tyr	Ile
	130					135					140				
Asp	Asp	Glu	Ala	Ile	Pro	Thr	Glu	His	Thr	Thr	Pro	Asp	Pro	Ile	Thr
145					150					155					160
Leu	Asn	Arg	Leu	Leu	Gly	Arg	Met	Ala	Asp	Glu	Gly	Cys	Lys	Tyr	Val
				165					170						175
Phe	Met	Glu	Val	Ser	Ser	His	Ser	Ile	Ala	Gln	Lys	Arg	Ile	Ser	Gly
			180					185					190		
Leu	Lys	Phe	Ala	Gly	Gly	Ile	Phe	Thr	Asn	Leu	Thr	Arg	Asp	His	Leu
		195					200					205			
Asp	Tyr	His	Lys	Thr	Val	Glu	Asn	Tyr	Leu	Lys	Ala	Lys	Lys	Lys	Phe
	210					215					220				
Phe	Asp	Asp	Met	Pro	Lys	Asn	Ser	Phe	Ser	Leu	Thr	Asn	Leu	Asp	Asp
225					230					235					240
Lys	Asn	Gly	Leu	Val	Met	Thr	Gln	Asn	Thr	Lys	Ser	Lys	Val	Tyr	Thr
				245					250					255	
Tyr	Ser	Leu	Arg	Ser	Leu	Ser	Asp	Phe	Lys	Gly	Arg	Val	Leu	Glu	Ser
			260					265					270		
His	Phe	Glu	Gly	Met	Leu	Leu	Asp	Phe	Asn	Asn	His	Glu	Leu	Ala	Val
		275					280					285			
Gln	Phe	Ile	Gly	Lys	Phe	Asn	Ala	Ser	Asn	Leu	Leu	Ala	Val	Phe	Gly
		290				295					300				
Ala	Ala	Val	Leu	Leu	Gly	Lys	Lys	Glu	Glu	Asp	Val	Leu	Val	Ala	Leu
305					310					315					320
Ser	Thr	Leu	His	Pro	Val	Ala	Gly	Arg	Phe	Asp	Ala	Ile	Arg	Ser	Pro
				325					330					335	
Gln	Gly	Tyr	Thr	Ala	Ile	Val	Asp	Tyr	Ala	His	Thr	Pro	Asp	Ala	Leu
			340					345					350		
Val	Asn	Val	Leu	Asn	Ala	Ile	His	Gly	Val	Leu	Glu	Gly	Lys	Gly	Lys
		355					360					365			
Val	Ile	Thr	Val	Val	Gly	Ala	Gly	Gly	Asn	Arg	Asp	Lys	Gly	Lys	Arg
	370					375					380				
Pro	Ile	Met	Ala	Lys	Glu	Ala	Ala	Arg	Ala	Ser	Asp	Arg	Val	Ile	Ile
385					390					395					400
Thr	Ser	Asp	Asn	Pro	Arg	Phe	Glu	Glu	Pro	Gln	Asp	Ile	Ile	Asn	Asp
				405					410					415	
Met	Leu	Ala	Gly	Leu	Asp	Thr	Glu	Asp	Lys	Lys	Lys	Thr	Leu	Ser	Ile
			420					425					430		
Ala	Asp	Arg	Lys	Glu	Ala	Ile	Arg	Thr	Ala	Cys	Met	Leu	Ala	Glu	Lys
		435					440					445			
Gly	Asp	Val	Ile	Leu	Val	Ala	Gly	Lys	Gly	His	Glu	Asn	Tyr	Gln	Asp
	450					455					460				
Ile	Lys	Gly	Val	Lys	His	His	Phe	Asp	Asp	Lys	Glu	Val	Leu	Lys	Glu
465					470					475					480
Ile	Phe	Ser	Leu	Thr	Val										
				485											

&lt;210&gt; 6560

&lt;211&gt; 82

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6560

Lys Pro Ser Cys Asn Trp His His Phe Tyr Tyr Lys Ala Gly Lys Arg  
 1 5 10 15  
 Lys Gly Val Lys Gln Arg Leu Phe Lys Arg Ala Pro Ile His Asp His  
 20 25 30  
 Phe Arg Thr Ser Met Ser Leu Val Glu Pro Gly Cys Ser Val Lys Phe  
 35 40 45  
 Thr Lys Pro Asp Gln Leu Phe His Glu Ser Lys Ile Thr Val Arg Phe  
 50 55 60  
 Trp Ile Val Thr Ile Val Leu Ala Ala Ile Thr Ile Ile Thr Leu Lys  
 65 70 75 80  
 Ile Arg

&lt;210&gt; 6561

&lt;211&gt; 595

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6561

Met Phe Gly Arg Ile Asn Asn Cys Ser Lys Met Lys Ile Asn Lys Leu  
 1 5 10 15  
 Leu Phe Gly Met Leu Leu Leu Leu Leu Ala Ser Cys Gly Ser Ser Arg  
 20 25 30  
 Lys Val Glu Lys Gln Ser Glu Gln Val Ala Val Gln Glu Ile Asn Leu  
 35 40 45  
 Thr Pro Glu Gln Gln Arg Lys Tyr Asp Tyr Phe Phe Leu Glu Ala Ser  
 50 55 60  
 Arg Leu Lys Val Lys Lys Glu Tyr Thr Ala Ala Phe Asp Leu Leu Gln  
 65 70 75 80  
 His Cys Leu Ala Ile Asn Pro Thr Gly Ser Ala Ala Leu Tyr Glu Ile  
 85 90 95  
 Ala Gln Tyr Tyr Leu Phe Leu Lys Gln Val Pro Gln Gly Gln Glu Ala  
 100 105 110  
 Leu Glu Lys Ala Val Ala Tyr Ala Pro Asp Asn Tyr Trp Tyr Ser Gln  
 115 120 125  
 Ala Leu Ala Gly Leu Tyr Gln Gln Gln Asp Gln Lys Glu Lys Ala Ile  
 130 135 140  
 Gly Ile Leu Glu Lys Met Ala Thr Arg Phe Pro Ala Lys Gln Asp Pro  
 145 150 155 160  
 Leu Phe Asn Leu Leu Asp Leu Tyr Asn Gln Lys Glu Asp Tyr Gly Lys  
 165 170 175  
 Val Ile Ser Thr Leu Asn Arg Ile Glu Glu Lys Thr Gly Lys Asn Glu  
 180 185 190  
 Gln Ile Thr Met Glu Lys Phe Arg Ile Tyr Leu Gln Met Lys Asp Asn  
 195 200 205  
 Lys Lys Ala Phe Glu Glu Ile Glu Ser Leu Val Asn Glu Tyr Pro Met  
 210 215 220  
 Asp Tyr Arg Tyr Gln Val Ile Leu Gly Asp Val Tyr Met Gln Asn Gly  
 225 230 235 240  
 Lys Lys Gln Glu Ala Tyr Asp Thr Tyr Lys Lys Val Leu Ala Ala Glu  
 245 250 255  
 Pro Asp Asn Pro Met Ala Leu Phe Ser Leu Ala Ser Tyr Tyr Glu Gln  
 260 265 270  
 Thr Gly Gln Lys Glu Leu Phe Glu Gln Gln Met Asp Thr Leu Leu Leu  
 275 280 285  
 Asn Arg Lys Val Pro Ser Asp Thr Lys Val Asn Val Met Arg Gln Phe  
 290 295 300  
 Ile Val Gln Ser Glu Gln Glu Gly Lys Asp Ser Thr Gln Val Ile Gly  
 305 310 315 320



Leu Phe Asp Arg Met Met Gln Met Asp Met Asp Asp Val Gln Ile Pro  
 325 330 335  
 Met Leu Tyr Ala Gln Tyr Leu Leu Ser Lys Gly Met Glu Ala Gln Ser  
 340 345 350  
 Ile Pro Val Leu Glu Gln Val Val Gln Ile Asp Pro Thr Asn Lys Ala  
 355 360 365  
 Ala Arg Met Thr Leu Leu Gly Ser Ala Ile Arg Lys Asn Asp Tyr Glu  
 370 375 380  
 Gln Val Ile Lys Ile Cys Glu Pro Gly Ile Glu Ala Thr Pro Asp Ala  
 385 390 395 400  
 Leu Glu Phe Tyr Phe Tyr Leu Val Ile Ala Tyr Asn Gln Ala Glu His  
 405 410 415  
 Trp Asp Asp Val Leu Glu Val Ser Arg Lys Ala Leu Glu His Val Thr  
 420 425 430  
 Pro Glu Ser Asp Lys Gln Met Val Ser Asp Phe Tyr Thr Ile Ile Gly  
 435 440 445  
 Asp Val Tyr His Thr Lys Lys Leu Met Lys Glu Ala Tyr Val Ala Tyr  
 450 455 460  
 Asp Ser Ala Leu Val Tyr Asn Pro Ser Asn Ile Gly Ala Leu Asn Asn  
 465 470 475 480  
 Tyr Ala Tyr Tyr Leu Ser Val Glu Arg Arg Asp Leu Asp Lys Ala Glu  
 485 490 495  
 Glu Met Ser Tyr Lys Thr Val Lys Ala Ala Pro Asn Asn Ala Thr Tyr  
 500 505 510  
 Leu Asp Thr Tyr Ala Trp Ile Leu Phe Glu Lys Gly Asn Tyr Ala Glu  
 515 520 525  
 Ala Arg Ile Tyr Ile Asp Asp Ala Ile Lys Asn Thr Lys Pro Glu Glu  
 530 535 540  
 Glu Ser Ser Val Val Phe Glu His Cys Gly Asp Ile Tyr Phe Met Thr  
 545 550 555 560  
 Gly Asp Val Glu Gly Ala Leu Lys Tyr Trp Lys Lys Ala Leu Glu Leu  
 565 570 575  
 Gly Thr Glu Ser Lys Thr Leu Lys Gln Lys Ile Glu Lys Lys Lys Tyr  
 580 585 590  
 Ile Ala Glu  
 595

&lt;210&gt; 6562

&lt;211&gt; 389

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6562

Thr Val Met Leu Asn Leu Lys Ser Asn Met Asn Lys Glu Asn Asn Lys  
 1 5 10 15  
 Glu Gly Gln Gly Asp Ala Leu Arg Val Ile Ile Ser Gly Gly Gly Thr  
 20 25 30  
 Gly Gly His Ile Phe Pro Ala Val Ser Ile Ala Asn Ala Ile Lys Glu  
 35 40 45  
 Leu Arg Pro Asp Ala Gln Ile Leu Phe Val Gly Ala Glu Gly Arg Met  
 50 55 60  
 Glu Met Gln Arg Val Pro Asp Ala Gly Tyr Gln Ile Ile Gly Leu Pro  
 65 70 75 80  
 Val Ala Gly Phe Asp Arg Lys His Leu Trp Lys Asn Val Ala Val Leu  
 85 90 95  
 Leu Lys Leu Val Arg Ser Gln Trp Lys Ala Arg Asn Ile Ile Arg Gln  
 100 105 110  
 Phe Arg Pro Gln Val Ala Val Gly Val Gly Gly Tyr Ala Ser Gly Pro  
 115 120 125

Thr Leu Lys Met Ala Gly Met Met Gly Val Pro Thr Leu Ile Gln Glu  
 130 135 140  
 Gln Asn Ser Tyr Ala Gly Val Thr Asn Lys Leu Leu Ala Gln Lys Ala  
 145 150 155 160  
 Arg Arg Ile Cys Val Ala Tyr Asp Gly Met Glu Lys Phe Phe Pro Ala  
 165 170 175  
 Asn Lys Ile Ile Met Thr Gly Asn Pro Val Arg Gln Asn Leu Leu Ala  
 180 185 190  
 Glu Lys Pro Glu Arg Glu Gln Ala Ile Arg Ser Phe Gly Leu Asn Pro  
 195 200 205  
 Glu Lys Lys Thr Ile Leu Ile Leu Gly Gly Ser Leu Gly Ala Arg Thr  
 210 215 220  
 Ile Asn Asn Thr Leu Ile Ala Gly Leu Gln Leu Ile Arg Arg Thr Thr  
 225 230 235 240  
 Asp Val Gln Phe Ile Trp Gln Thr Gly Lys Ile Tyr His Gln Gln Val  
 245 250 255  
 Thr Glu Ala Val Lys Ala Ala Gly Glu Ile Leu Asn Leu Phe Val Thr  
 260 265 270  
 Asp Phe Ile Lys Asp Met Ala Ala Tyr Ala Ala Ala Asp Leu Val  
 275 280 285  
 Ile Ser Arg Ala Gly Ala Gly Ser Ile Ser Glu Phe Cys Leu Leu Asn  
 290 295 300  
 Lys Pro Val Ile Leu Val Pro Ser Pro Asn Val Ala Glu Asp His Gln  
 305 310 315 320  
 Thr Lys Asn Ala Leu Ala Leu Val Asn Lys Gln Ala Ala Ile Tyr Val  
 325 330 335  
 Lys Asp Ala Glu Ala Glu Asn Lys Leu Leu Pro Val Ala Leu Glu Thr  
 340 345 350  
 Ile Ala Asn Ala Glu Lys Leu Ser Glu Leu Ser Glu Asn Ile Ala His  
 355 360 365  
 Leu Ala Leu Pro Asp Ser Ala Val Val Ile Ala Lys Glu Val Ile Lys  
 370 375 380  
 Leu Ala Gln Gln Ser  
 385

<210> 6563  
 <211> 206  
 <212> PRT  
 <213> B.fragilis

<400> 6563  
 Thr Glu Asn Arg Lys Lys Glu Ile His Cys Arg Met Lys Gly Ser Lys  
 1 5 10 15  
 Leu Lys Gln Thr Val Ile Lys Gln Ser Tyr Leu Leu Pro Leu Leu Leu  
 20 25 30  
 Met Val Val Leu Leu Ala Gly Cys Lys Thr Ser Lys Val Val Lys Thr  
 35 40 45  
 Thr Pro Val Glu Pro Ala Tyr Leu Ser Ser Lys Leu Gln Leu Thr Val  
 50 55 60  
 Pro Asn Lys Asn Gly Ser Met Thr Val Ser Gly Ser Met Lys Met Lys  
 65 70 75 80  
 Ser Gly Glu Arg Ile Gln Leu Ser Val Leu Met Pro Val Phe Arg Ser  
 85 90 95  
 Glu Val Met Arg Met Glu Val Thr Pro Asp Glu Val Leu Leu Ile Asp  
 100 105 110  
 Arg Met Asn Lys Arg Tyr Val Arg Ala Thr Arg Asp Glu Leu Lys Gly  
 115 120 125  
 Ile Leu Pro Glu Asn Ala Asp Phe Asp Arg Leu Glu Lys Leu Leu Phe  
 130 135 140

Lys Ala Ser Leu Pro Gly Glu Lys Lys Glu Leu Thr Gly Arg Glu Leu  
 145 150 155 160  
 Gly Ile Pro Ser Leu Glu Lys Ala Lys Val Arg Leu Ser Asp Phe Ser  
 165 170 175  
 Thr Ala Glu Phe Glu Leu Ile Pro Thr Glu Val Ser Ser Arg Tyr Thr  
 180 185 190  
 Gln Val Ala Leu Glu Asp Leu Leu Lys Met Leu Ile Gln Leu  
 195 200 205

<210> 6564  
 <211> 150  
 <212> PRT  
 <213> B.fragilis

<400> 6564  
 Ile Val Asn Arg Leu Asn Met Asn Ile Gln Val Ile Asn Lys Ser Lys  
 1 5 10 15  
 His Pro Leu Pro Ala Tyr Ala Thr Glu Leu Ser Ala Gly Met Asp Ile  
 20 25 30  
 Arg Ala Asn Ile Ser Glu Pro Ile Ser Leu Ala Pro Met Gln Arg Cys  
 35 40 45  
 Leu Val Pro Thr Gly Leu Phe Ile Ala Leu Pro Gln Gly Phe Glu Ala  
 50 55 60  
 Gln Ile Arg Pro Arg Ser Gly Leu Ala Leu Lys Lys Gly Ile Thr Val  
 65 70 75 80  
 Leu Asn Ser Pro Gly Thr Ile Asp Ala Asp Tyr Arg Gly Glu Ile Cys  
 85 90 95  
 Ile Ile Leu Val Asn Leu Ser Ala Glu Thr Phe Val Ile Glu Asp Gly  
 100 105 110  
 Glu Arg Ile Ala Gln Met Val Ile Ala Arg His Glu Gln Ala Val Trp  
 115 120 125  
 Lys Glu Val Glu Val Leu Asp Glu Thr Glu Arg Gly Ala Gly Gly Phe  
 130 135 140  
 Gly His Thr Gly Arg Gly  
 145 150

<210> 6565  
 <211> 723  
 <212> PRT  
 <213> B.fragilis

<400> 6565  
 Asp Asp Leu Ser Met Arg Ile Gly Phe Phe Ser Gly Met Leu Gly Gly  
 1 5 10 15  
 Leu Cys Leu Ile Ser Thr Leu His Ala Gln Glu Pro Asp Ser Leu Lys  
 20 25 30  
 Ala Val Ser Leu Ser Glu Val Val Val Thr Glu Ser Tyr Gln His Leu  
 35 40 45  
 Lys Asn Lys Asn Ser Thr Trp Arg Met Glu Val Val Gly Lys Glu Phe  
 50 55 60  
 Leu Arg Glu His Phe Thr Gly Asn Leu Ile Gln Thr Leu Gly Thr Leu  
 65 70 75 80  
 Pro Gly Val His Ser Met Asp Ile Gly Ser Gly Phe Ser Lys Pro Met  
 85 90 95  
 Ile Arg Gly Met Gly Phe Asn Arg Ile Ser Val Val Glu Asn Gly Ile  
 100 105 110  
 Lys Gln Glu Gly Gln Gln Trp Gly Ala Asp His Gly Leu Glu Leu Asp  
 115 120 125  
 Ala Phe Asn Ala Gly Gln Val Ser Ile Arg Lys Gly Pro Ala Ser Leu

130	135	140
Leu Tyr Gly Ser Asp Ala Met Gly Gly Ala Ile Glu Leu Val Pro Leu		
145	150	155
Pro Leu Pro Ala Gly Asn Arg Leu Phe Gly Glu Ala Ser Leu Leu Gly		160
	165	170
Lys Ser Val Asn Gly Thr Leu Gly Gly Ser Leu Met Leu Gly Ile Lys		175
	180	185
Lys Asp Ala Trp Tyr Thr Trp Ala Arg Tyr Ser Glu Gln His Phe Gly		190
	195	200
Asp Tyr Arg Ile Pro Thr Asp Thr Ile Val Tyr Leu Thr Gln Arg Met		205
	210	215
Pro Val Tyr His Arg Arg Leu Lys Asn Thr Ala Gly Phe Glu Arg Asp		220
225	230	235
Val Ser Trp Ala Ala Gly Phe Arg Lys Glu Arg Tyr Val Ser Ser Tyr		240
	245	250
Trp Val Ser Asn Val Phe Gln Lys Thr Gly Phe Phe Pro Gly Ala His		255
	260	265
Gly Ile Pro Asp Val Ser Arg Leu Gln Asp Asp Gly Asp Ser Arg Asn		270
	275	280
Ile Glu Leu Pro Tyr Ser Gln Val Asn His Leu Lys Val Ser Thr Arg		285
	290	295
Gln Ser Leu Leu Tyr Asp Lys Trp Ala Leu Thr Trp Asp Ile Gly Phe		300
305	310	315
Gln Lys Asn His Arg Glu Glu Trp Ser Arg Phe His Thr His Tyr Asp		320
	325	330
Ala Gln Pro Val Pro Asp Lys Asp Pro Asp Lys Glu Leu Ala Phe Thr		335
	340	345
Leu Asn Thr Tyr Ser Ser Ala Val Lys Leu Lys Leu Phe Ala Ser Ala		350
	355	360
Val Trp Gln His Thr Ala Gly Trp Asp Val Gln Tyr Gln Arg Asn Thr		365
	370	375
Ile Ala Gly Tyr Ser Phe Leu Leu Pro Ala Tyr Arg Arg Phe Thr Thr		380
385	390	395
Gly Ala Phe Trp Met Thr Thr Tyr Arg Pro Gly Pro Thr Leu Ser Phe		400
	405	410
Ser Gly Gly Leu Arg Tyr Asp Tyr Gly Lys Ile Asp Ala Ser Ala Tyr		415
	420	425
Thr Asp Pro Tyr Leu Ala Ile Tyr Leu Arg Glu Gln Gly Tyr Gly Asp		430
	435	440
Glu Phe Ile Arg Lys Tyr Glu Trp Arg Ser Tyr Pro Val Arg Arg His		445
	450	455
Phe Gly Asp Tyr Ser Gly Ser Leu Gly Leu Val Trp Ser Pro Ser Gly		460
465	470	475
Gly His Leu Leu Gln Val Asn Val Gly His Ser Phe Arg Leu Pro Gly		480
	485	490
Ala Asn Glu Leu Ala Ser Asn Gly Val His His Gly Thr Phe Arg His		495
	500	505
Glu Gln Gly Asp Ala Ala Leu Ala Ser Glu Arg Gly Trp Gln Phe Asp		510
	515	520
Ala Ser Tyr Thr Tyr Glu Asn Gly Pro Leu Ser Val Ser Leu Ser Pro		525
	530	535
Phe Val Ser Trp Phe Ser Asn Tyr Ile Phe Leu Arg Pro Thr Gly Glu		540
545	550	555
Trp Ser Ile Leu Pro His Ala Gly Gln Ile Tyr Arg Tyr Thr Gly Ala		560
	565	570
Glu Ala Leu Phe Ala Gly Gly Glu Ala Ala Val Gly Ile Asp Phe Leu		575
	580	585
Arg His Phe Asn Tyr Arg Val Ser Gly Glu Tyr Val Tyr Thr Tyr Asn		590
	595	600
		605

Cys Asp Glu His Ile Pro Leu Ser Phe Ser Pro Pro Ala Ser Leu Arg  
 610 615 620  
 Asn Thr Leu Thr Trp Arg Tyr Lys Glu Phe Ser Ile Tyr Gly Glu Val  
 625 630 635 640  
 Gln His Ile Ala Ala Gln His Arg Val Ala Arg Asn Glu Asp Pro Thr  
 645 650 655  
 Pro Gly Ala Gln Leu Leu Asn Ala Gly Val Ser Ala Asn Leu Arg Ile  
 660 665 670  
 Gly Gly Ile Trp Ala Glu Val Thr Leu Ser Ala Arg Asn Leu Ser Gly  
 675 680 685  
 Ala Lys Tyr Phe Asn His Leu Ser Phe Tyr Arg Lys Val Glu Ile Pro  
 690 695 700  
 Glu Pro Gly Arg Asn Phe Gln Ile Leu Ile Lys Val Pro Phe Lys Ser  
 705 710 715 720  
 Leu Leu Lys

<210> 6566  
 <211> 118  
 <212> PRT  
 <213> B.fragilis

<400> 6566  
 Asn Lys Arg Ser Glu Met Glu Asp Lys Glu Ala Lys Lys Lys Lys Ser  
 1 5 10 15  
 Asn Ser Leu Lys Ser Ile Leu Gly Gly Asp Ile Leu Ala Thr Asp Phe  
 20 25 30  
 Phe Arg Arg Gln Thr Lys Leu Leu Val Leu Ile Met Val Leu Ile Ile  
 35 40 45  
 Phe Tyr Ile His Asn Arg Tyr Ala Ser Gln Gln Gln Gln Ile Glu Ile  
 50 55 60  
 Asp Lys Leu Lys Lys Glu Leu Ile Asp Ile Lys Tyr Asp Ala Leu Thr  
 65 70 75 80  
 Arg Ser Ser Glu Leu Met Glu Lys Ser Arg Gln Ser Arg Ile Glu Asp  
 85 90 95  
 Tyr Ile Ser Thr Lys Glu Ser Asp Leu Gln Thr Ser Thr His Pro Pro  
 100 105 110  
 Tyr Leu Ile Ser Thr Lys  
 115

<210> 6567  
 <211> 198  
 <212> PRT  
 <213> B.fragilis

<400> 6567  
 Ser Leu Ile Phe Pro Arg His Cys Leu Lys Asn Ala Val Asn Leu His  
 1 5 10 15  
 His Arg Lys Thr Thr Asn Ile His Asn Leu Lys Ser Asn Val Met Lys  
 20 25 30  
 Ser Leu Ser Phe Arg Lys Asp Leu Ile Gly Val Gln Glu Glu Leu Leu  
 35 40 45  
 Arg Phe Ala Tyr Lys Leu Thr Asp Arg Glu Glu Ala Asn Asp Leu  
 50 55 60  
 Leu Gln Glu Thr Ser Leu Lys Ala Leu Asp Asn Glu Asp Lys Tyr Thr  
 65 70 75 80  
 Pro Asp Thr Asn Phe Lys Gly Trp Met Tyr Thr Ile Met Arg Asn Ile  
 85 90 95  
 Phe Ile Asn Asn Tyr Arg Lys Val Val Arg Asp Gln Thr Phe Val Asp

[illegible]

<400> 6568

<400> 6569

Tyr	Lys	Ser	Ile	Ser	Leu	Phe	Ile	Met	Lys	Arg	Lys	Ile	Phe	Ser	Leu
1				5					10					15	
Ile	Val	Val	Leu	Val	Val	Thr	Ile	Ser	Phe	Ile	Asn	Val	Trp	Ile	Ser
			20					25					30		
Val	Gly	Ser	Thr	Asn	Ala	Lys	Val	Lys	Leu	Arg	Leu	Ala	Ala	Ile	Asp
		35				40						45			
Ala	Met	Ala	Met	Ile	Glu	Ala	Glu	Thr	Pro	Gly	Asp	Thr	Glu	Leu	Ser
	50					55					60				
Leu	Ser	Gly	Ser	Cys	Lys	Ile	Thr	Phe	Thr	Cys	Tyr	Asp	Ser	Trp	Thr
65					70					75					80

Gly	Ala	Ala	Asp	Gly	Ser	Ile	Thr	Cys	Trp	Gly	Ala	Glu	Tyr	Cys	Lys
			85					90						95	
Arg	Gly	Ile	Lys	Lys	Glu	Gly	Ile	Val	Ile	Ile	Thr	Glu	Thr	Arg	Trp
			100					105						110	
Val	Glu	Cys	Asp	Gly	Lys	Arg	Thr	Glu	Cys						
			115					120							

&lt;210&gt; 6570

&lt;211&gt; 414

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6570

Gly	Asn	His	Met	Thr	Lys	Ala	Ile	Asp	Phe	Arg	Tyr	Glu	Cys	Lys	Ile
1			5					10						15	
Ile	Val	Ile	Asn	Glu	Lys	Gln	Ile	Met	Lys	Ile	Val	Asn	Ile	Phe	Val
			20					25					30		
Ala	Leu	Phe	Cys	Leu	Thr	Ala	Cys	Ser	Leu	Ser	Asn	Asp	Leu	Lys	Asp
			35				40					45			
Arg	Leu	Ile	Leu	Lys	Pro	Gln	Ser	Ile	Leu	Ile	Asp	Pro	Asp	Lys	Val
			50			55					60				
Lys	Asp	Phe	Ile	Asp	Leu	Thr	Pro	Leu	Leu	Arg	Asp	Ser	Val	Glu	Ile
65					70					75					80
Ile	Pro	Leu	Glu	Thr	Lys	Asp	Glu	Cys	Leu	Leu	Ser	Glu	Ile	Glu	Arg
				85				90						95	
Ile	Glu	Phe	Tyr	Lys	Asp	Arg	Ile	Phe	Val	Leu	Asp	Arg	Thr	Arg	Lys
			100					105						110	
Gly	Val	Tyr	Met	Phe	Asp	Gln	Ser	Gly	Arg	Phe	Ile	Gly	Lys	Ile	Gly
			115					120					125		
Cys	Gln	Gly	Ser	Gly	Pro	Gly	Glu	Phe	Thr	Ser	Val	Gly	Phe	Phe	Cys
			130			135						140			
Val	Thr	Gly	Asp	Ser	Val	Leu	Ile	Ser	Asp	Gln	His	Gln	Ser	Lys	Trp
145					150					155					160
Val	Val	Tyr	Asn	Leu	Gln	Asp	Lys	Arg	Thr	Thr	Glu	Phe	Ser	Cys	Gly
				165					170					175	
Glu	Phe	Thr	Tyr	Leu	Asn	Gly	Phe	Leu	Met	Gly	Arg	Asn	Leu	Tyr	Leu
			180					185					190		
Val	Ser	Asn	Tyr	Asn	Lys	Ser	Gln	Ser	Asp	Arg	Phe	Asn	Leu	Tyr	Lys
		195					200					205			
Phe	Asp	Val	Ser	Thr	Arg	Lys	Ile	Glu	Glu	Ala	Leu	Ile	Pro	Phe	Glu
		210				215					220				
Glu	Lys	Met	Asp	Lys	Tyr	Ser	Thr	Thr	Ala	Phe	Thr	Ile	Tyr	Ala	Ser
225					230					235					240
Gln	Tyr	Gln	Asp	Thr	Ala	Phe	Leu	Ile	Tyr	Pro	Phe	Asn	Asp	Thr	Ile
				245					250					255	
Tyr	Glu	Val	Ser	Ser	Lys	Gly	Ala	Gln	Pro	Phe	Tyr	Thr	Ile	Asp	Phe
			260					265						270	
Thr	Gln	Arg	Asn	Leu	Pro	Asp	Asp	Ile	Glu	Pro	Ile	Asn	Asn	Ser	Phe
			275				280						285		
Arg	Leu	Ala	Val	Ala	Lys	Gly	Asn	Phe	Val	Lys	Gly	Leu	Ser	Tyr	Met
		290				295					300				
Gln	Met	Ser	Gly	Asn	Tyr	Ile	Leu	Gly	Arg	Tyr	Ala	Asp	Lys	Gly	Tyr
305					310					315					320
Phe	Arg	Tyr	Leu	Ser	Val	Asp	Arg	Ser	Thr	Leu	Lys	Ser	Thr	Val	Gly
				325					330					335	
Asn	Ser	Phe	Val	Val	Arg	Asp	Leu	Gly	Tyr	Leu	Pro	Val	Thr	Ser	Phe
			340					345					350		
Tyr	Thr	Ile	Gly	Asp	Ala	Leu	Val	Ser	Val	Tyr	Ser	Ala	Ser	Ala	Leu
			355				360						365		

1  
 2  
 3  
 4  
 5  
 6  
 7  
 8  
 9  
 10  
 11  
 12  
 13  
 14  
 15  
 16  
 17  
 18  
 19  
 20  
 21  
 22  
 23  
 24  
 25  
 26  
 27  
 28  
 29  
 30  
 31  
 32  
 33  
 34  
 35  
 36  
 37  
 38  
 39  
 40  
 41  
 42  
 43  
 44  
 45  
 46  
 47  
 48  
 49  
 50  
 51  
 52  
 53  
 54  
 55  
 56  
 57  
 58  
 59  
 60  
 61  
 62  
 63  
 64  
 65  
 66  
 67  
 68  
 69  
 70  
 71  
 72  
 73  
 74  
 75  
 76  
 77  
 78  
 79  
 80  
 81  
 82  
 83  
 84  
 85  
 86  
 87  
 88  
 89  
 90  
 91  
 92  
 93  
 94  
 95  
 96  
 97  
 98  
 99  
 100  
 101  
 102  
 103  
 104  
 105  
 106  
 107  
 108  
 109  
 110  
 111  
 112  
 113  
 114  
 115  
 116  
 117  
 118  
 119  
 120  
 121  
 122  
 123  
 124  
 125  
 126  
 127  
 128  
 129  
 130  
 131  
 132  
 133  
 134  
 135  
 136  
 137  
 138  
 139  
 140  
 141  
 142  
 143  
 144  
 145  
 146  
 147  
 148  
 149  
 150  
 151  
 152  
 153  
 154  
 155  
 156  
 157  
 158  
 159  
 160  
 161  
 162  
 163  
 164  
 165  
 166  
 167  
 168  
 169  
 170  
 171  
 172  
 173  
 174  
 175  
 176  
 177  
 178  
 179  
 180  
 181  
 182  
 183  
 184  
 185  
 186  
 187  
 188  
 189  
 190  
 191  
 192  
 193  
 194  
 195  
 196  
 197  
 198  
 199  
 200  
 201  
 202  
 203  
 204  
 205  
 206  
 207  
 208  
 209  
 210  
 211  
 212  
 213  
 214  
 215  
 216  
 217  
 218  
 219  
 220  
 221  
 222  
 223  
 224  
 225  
 226  
 227  
 228  
 229  
 230  
 231  
 232  
 233  
 234  
 235  
 236  
 237  
 238  
 239  
 240  
 241  
 242  
 243  
 244  
 245  
 246  
 247  
 248  
 249  
 250  
 251  
 252  
 253  
 254  
 255  
 256  
 257  
 258  
 259  
 260  
 261  
 262  
 263  
 264  
 265  
 266  
 267  
 268  
 269  
 270  
 271  
 272  
 273  
 274  
 275  
 276  
 277  
 278  
 279  
 280  
 281  
 282  
 283  
 284  
 285  
 286  
 287  
 288  
 289  
 290  
 291  
 292  
 293  
 294  
 295  
 296  
 297  
 298  
 299  
 300  
 301  
 302  
 303  
 304  
 305  
 306  
 307  
 308  
 309  
 310  
 311  
 312  
 313  
 314  
 315  
 316  
 317  
 318  
 319  
 320  
 321  
 322  
 323  
 324  
 325  
 326  
 327  
 328  
 329  
 330  
 331  
 332  
 333  
 334  
 335  
 336  
 337  
 338  
 339  
 340  
 341  
 342  
 343  
 344  
 345  
 346  
 347  
 348  
 349  
 350  
 351  
 352  
 353  
 354  
 355  
 356  
 357  
 358  
 359  
 360  
 361  
 362  
 363  
 364  
 365  
 366  
 367  
 368  
 369  
 370  
 371  
 372  
 373  
 374  
 375  
 376  
 377  
 378  
 379  
 380  
 381  
 382  
 383  
 384  
 385  
 386  
 387  
 388  
 389  
 390  
 391  
 392  
 393  
 394  
 395  
 396  
 397  
 398  
 399  
 400

Met Gln Met Leu Asp Val Ile Leu Ser Pro Asp Ser Pro Ile Lys Glu  
 370 375 380  
 Lys Tyr Arg Thr Lys Phe Glu Ser Leu Lys Gln Ile Thr Asn Cys Glu  
 385 390 395 400  
 Gly Asn Pro Val Leu Leu Lys Phe Gln Phe Glu Ser Ala Glu  
 405 410

<210> 6571  
 <211> 265  
 <212> PRT  
 <213> B.fragilis

<400> 6571

Asp Ser Ser Ile Arg Leu Ser Ile Ser Ser Phe Phe Val Ala Leu Leu  
 1 5 10 15  
 Pro Glu Arg Lys Val Arg Ala Met Leu Gln Lys Thr Val Gly Ile Val  
 20 25 30  
 Leu His Val Leu Lys Tyr Asn Asp Thr Ser Asn Ile Val Glu Met Tyr  
 35 40 45  
 Thr Glu Leu Ser Gly Arg Ala Ser Phe Leu Val Thr Val Pro Arg Ser  
 50 55 60  
 Lys Lys Ala Thr Val Lys Ser Val Leu Phe Gln Pro Leu Ala Leu Ile  
 65 70 75 80  
 Glu Phe Glu Ala Asp Tyr Arg Pro Asn Thr Ser Leu Phe Arg Ile Lys  
 85 90 95  
 Glu Ala Lys Ser Phe Ser Pro Phe Thr Ser Ile Pro Tyr Asp Pro Phe  
 100 105 110  
 Lys Ser Ala Ile Ala Leu Phe Leu Ala Glu Phe Leu Tyr Arg Ala Ile  
 115 120 125  
 Arg Glu Glu Ala Glu Asn Arg Pro Leu Phe Ala Tyr Leu Gln His Ser  
 130 135 140  
 Ile Leu Trp Leu Asp Thr Cys Lys Ile Ser Phe Ala Asn Phe His Leu  
 145 150 155 160  
 Val Phe Leu Met Arg Leu Ser Arg Phe Leu Gly Leu Tyr Pro Asn Leu  
 165 170 175  
 Asp Asp Tyr His Ala Gly Asp Tyr Phe Asp Met Leu Asn Ala Thr Phe  
 180 185 190  
 Thr Ser Val Arg Pro Gln Leu His Ser Ser Tyr Ile Gln Pro Asp Glu  
 195 200 205  
 Ala Gly Arg Leu Leu Gln Leu Met Arg Met Asn Tyr Glu Thr Met His  
 210 215 220  
 Leu Phe Gly Met Asn Arg Thr Glu Arg Ala Arg Cys Leu Ala Ile Ile  
 225 230 235 240  
 Asn Glu Tyr Tyr Arg Leu His Leu Pro Asp Phe Pro Ile Leu Lys Ser  
 245 250 255  
 Leu Asp Val Leu Lys Glu Leu Phe Asp  
 260 265

<210> 6572  
 <211> 171  
 <212> PRT  
 <213> B.fragilis

<400> 6572

Lys Pro Lys Ile Leu Met Ser Ile Asn Tyr Ala Val Thr Lys Lys Val  
 1 5 10 15  
 Asp Lys Ser Lys Gly Ile Ala Lys Glu Arg Tyr Tyr Ala Thr Thr Arg  
 20 25 30  
 Ala Leu Gln Lys Lys Pro Val Asn Ser Val Gln Ile Ala Asn Gln Leu



35	40	45
Ala Glu Arg Ser Ser Leu	Gln Asn Gly Asp Val	Leu Ser Ala Leu Thr
50	55	60
Gln Leu Ser Asp Ile Ile	Ala Ala His Leu Lys	Glu Gly Arg Thr Val
65	70	75
Ser Ile Asp Gly Leu Gly	Asn Phe Tyr Pro Ser	Ile Thr Ser Glu Ala
85	90	95
Val Asp Lys Pro Glu Glu	Cys Thr Ala Asn Lys	Val Trp Val Ser Arg
100	105	110
Ile Cys Phe Lys Ala Ala	Pro Ala Phe Leu Asn	Asn Val Arg Lys Thr
115	120	125
Asp Phe Val Ser Leu Gln	Leu Lys Tyr Gly Arg	Lys Ser Thr Lys Ser
130	135	140
Gln Asn Gly Ser Asp Lys	Glu Thr Thr Asp Val	Ile Pro His Gln Gln
145	150	155
Ser Ile Ser Glu Asp Ser	Ser Leu Ser Asp Glu	
165	170	

&lt;210&gt; 6573

&lt;211&gt; 352

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6573

Lys Asn Arg Met Leu Ile Met Ser Ala Ser Phe Asn Leu Leu Asp Arg	
1	5 10 15
Lys Arg Leu Lys Gly Leu Leu Leu Phe Cys Pro Val Trp Val Leu Leu	
20	25 30
Phe Trp Gly Cys Gly Arg Thr Val Glu Ser Pro Glu Lys Val Leu Lys	
35	40 45
Cys Glu Leu Val Ser Tyr Ile Lys Ser Tyr Pro Asp Ser Ser Phe Phe	
50	55 60
Ser Gln Val Gly Thr Met Gln Tyr Gln Asp Gly Lys Ile Tyr Leu Leu	
65	70 75 80
Asp Glu Ala Arg Arg Asp Val Ala Val Met Asp Leu Glu Phe Ser Asp	
85	90 95
Phe Ser Leu Ile Gly Lys Pro Gly Asp Gly Pro Gly Glu Leu Val Arg	
100	105 110
Pro Val Gly Phe Tyr Val Glu Lys Asp Thr Val Tyr Ile Leu Asp Gly	
115	120 125
Gly Thr Val Asn Val Lys Arg Tyr Phe Asp Ser Glu Phe Ile Ser Ser	
130	135 140
Phe Ser Val Pro Ala Ala Asn Asp Tyr Arg Phe Phe Met Asn Lys Asp	
145	150 155 160
Thr Ile Phe Leu Ser Ala Val Thr Asp Ser Thr Phe Tyr Thr Lys Ser	
165	170 175
Ala Glu Ser Trp Gln Arg Gly Asp Leu Phe Thr Leu Val Leu Ala Gly	
180	185 190
Asn Val His Asp Phe Gly Asn Ala Arg Arg Asn Met Val Leu Asn Gln	
195	200 205
Arg His Leu Val Lys Asp Ser Thr Ser Leu Tyr Gly Ile Thr Ser Ser	
210	215 220
Ser Ser Leu Leu Gly Lys Tyr Asp Leu Ser Ser Asn Lys Gln Val Ala	
225	230 235 240
Thr Phe Asp Leu Ser Ser Val Ser Leu Ile Lys Asp Asn Leu Thr Tyr	
245	250 255
Glu Gly Ser Gln Pro Tyr Asp Pro Lys Ser Tyr Tyr Thr Phe Ile Ser	
260	265 270
Asp Ala Tyr Ala Met Asn Gly Tyr Leu Tyr Leu Leu Cys Ser Glu Leu	

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65  
66  
67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82  
83  
84  
85  
86  
87  
88  
89  
90  
91  
92  
93  
94  
95  
96  
97  
98  
99  
100  
101  
102  
103  
104  
105  
106  
107  
108  
109  
110  
111  
112  
113  
114  
115  
116  
117  
118  
119  
120  
121  
122  
123  
124  
125  
126  
127  
128  
129  
130  
131  
132  
133  
134  
135  
136  
137  
138  
139  
140  
141  
142  
143  
144  
145  
146  
147  
148  
149  
150  
151  
152  
153  
154  
155  
156  
157  
158  
159  
160  
161  
162  
163  
164  
165  
166  
167  
168  
169  
170  
171  
172  
173  
174  
175  
176  
177  
178  
179  
180  
181  
182  
183  
184  
185  
186  
187  
188  
189  
190  
191  
192  
193  
194  
195  
196  
197  
198  
199  
200  
201  
202  
203  
204  
205  
206  
207  
208  
209  
210  
211  
212  
213  
214  
215  
216  
217  
218  
219  
220  
221  
222  
223  
224  
225  
226  
227  
228  
229  
230  
231  
232  
233  
234  
235  
236  
237  
238  
239  
240  
241  
242  
243  
244  
245  
246  
247  
248  
249  
250  
251  
252  
253  
254  
255  
256  
257  
258  
259  
260  
261  
262  
263  
264  
265  
266  
267  
268  
269  
270  
271  
272  
273  
274  
275  
276  
277  
278  
279  
280  
281  
282  
283  
284  
285  
286  
287  
288  
289  
290  
291  
292  
293  
294  
295  
296  
297  
298  
299  
300  
301  
302  
303  
304  
305  
306  
307  
308  
309  
310  
311  
312  
313  
314  
315  
316  
317  
318  
319  
320  
321  
322  
323  
324  
325  
326  
327  
328  
329  
330  
331  
332  
333  
334  
335  
336  
337  
338  
339  
340  
341  
342  
343  
344  
345  
346  
347  
348  
349  
350  
351  
352  
353  
354  
355  
356  
357  
358  
359  
360  
361  
362  
363  
364  
365  
366  
367  
368  
369  
370  
371  
372  
373  
374  
375  
376  
377  
378  
379  
380  
381  
382  
383  
384  
385  
386  
387  
388  
389  
390  
391  
392  
393  
394  
395  
396  
397  
398  
399  
400

[illegible]

<400> 6574

```
<210> 6575
<211> 708
<212> PRT
<213> B.fragilis
```

<400> 6575

Lys	Met	Ala	Val	Asn	Lys	Lys	Asn	Ile	Met	Thr	Arg	Tyr	Phe	Phe	Val
1				5					10					15	
Ile	Leu	Leu	Met	Gly	Leu	Ile	Gly	Val	Ala	Ile	Val	Val	Lys	Ala	Gly
			20					25					30		
Ile	Thr	Met	Phe	Ala	Glu	Arg	Gln	Tyr	Trp	Gln	Asp	Val	Ala	Asp	Arg
		35					40					45			
Phe	Val	Lys	Glu	Asn	Val	Thr	Val	Lys	Pro	Asn	Arg	Gly	Asn	Ile	Ile
	50					55					60				
Ser	Ser	Asp	Gly	Lys	Leu	Met	Ala	Ser	Ser	Leu	Pro	Glu	Tyr	Arg	Ile
65					70					75					80
Tyr	Met	Asp	Phe	Lys	Ala	Gly	Gly	Val	Lys	Lys	Asp	Thr	Met	Leu	Met
				85					90					95	
Asn	His	Leu	Asp	Glu	Ile	Cys	Glu	Gly	Leu	His	Lys	Ile	Phe	Pro	Asp
			100					105					110		
Lys	Ser	Ala	Ser	Glu	Phe	Lys	Thr	His	Leu	Lys	Lys	Gly	Arg	Lys	Gln
		115					120					125			

Gly	Ser	Arg	Asn	Tyr	Leu	Ile	Tyr	Pro	Lys	Arg	Ile	Ser	Tyr	Ile	Gln
130						135					140				
Tyr	Lys	Glu	Ala	Lys	Arg	Leu	Pro	Val	Phe	Asn	Leu	Asn	Lys	Tyr	Lys
145					150					155					160
Gly	Gly	Phe	His	Glu	Leu	Ala	Tyr	Asn	Gln	Arg	Lys	Lys	Pro	Phe	Gly
				165					170					175	
Ser	Leu	Ala	Ala	Arg	Thr	Leu	Gly	Asp	Leu	Tyr	Ala	Asp	Thr	Ala	Gln
			180					185					190		
Gly	Ala	Lys	Asn	Gly	Ile	Glu	Leu	Ala	Phe	Asp	Ser	Ile	Leu	Lys	Gly
	195					200					205				
His	Asp	Gly	Ile	Thr	His	Arg	Gln	Lys	Val	Met	Asn	Lys	Tyr	Leu	Asn
210						215					220				
Ile	Val	Asp	Ile	Pro	Pro	Val	Asp	Gly	Cys	Asp	Leu	Leu	Ser	Thr	Ile
225					230					235					240
Asp	Val	Gly	Met	Gln	Asp	Ile	Cys	Glu	Lys	Ala	Leu	Thr	Asp	Lys	Leu
				245						250				255	
Lys	Glu	Leu	Asn	Ala	Ser	Val	Gly	Val	Ala	Val	Leu	Met	Glu	Val	Ala
			260						265				270		
Thr	Gly	Glu	Val	Lys	Ala	Ile	Val	Asn	Met	Thr	Lys	Ala	Gly	Asp	Gly
	275						280					285			
Asn	Tyr	Tyr	Glu	Met	Arg	Asn	Asn	Ala	Ile	Ser	Asp	Met	Leu	Glu	Pro
290						295					300				
Gly	Ser	Thr	Phe	Lys	Thr	Ala	Ser	Ile	Met	Val	Ala	Leu	Glu	Asp	Gly
305					310						315				320
Lys	Ile	Thr	Pro	Glu	Asp	Gly	Ile	Asp	Thr	Gly	Asn	Gly	Ile	Lys	Met
				325						330				335	
Met	His	Gly	Arg	Pro	Met	Lys	Asp	Trp	Asn	Trp	Tyr	Lys	Gly	Gly	Tyr
			340					345					350		
Gly	Tyr	Leu	Thr	Val	Thr	Gln	Ile	Leu	Glu	Val	Ser	Ser	Asn	Ile	Gly
		355				360						365			
Thr	Ser	Ser	Ile	Ile	Glu	Lys	Tyr	Tyr	Gly	Ser	Asn	Pro	Gln	Lys	Phe
	370					375					380				
Val	Asp	Gly	Leu	Lys	Arg	Met	Ser	Ile	Asp	Gln	Pro	Leu	Gln	Leu	Gln
385					390					395					400
Ile	Ala	Gly	Glu	Gly	Lys	Pro	Asn	Ile	Lys	Gly	Pro	Lys	Glu	Arg	Tyr
				405						410				415	
Phe	Ala	Lys	Thr	Thr	Leu	Pro	Trp	Met	Ser	Ile	Gly	Tyr	Glu	Thr	Gln
		420						425					430		
Val	Pro	Pro	Met	Asn	Ile	Leu	Thr	Phe	Tyr	Asn	Ala	Ile	Ala	Asn	Asn
		435					440					445			
Gly	Val	Met	Val	Arg	Pro	Lys	Phe	Val	Lys	Ala	Ala	Ile	Lys	Asn	Gly
	450					455					460				
Glu	Ile	Val	Lys	Glu	Tyr	Pro	Thr	Glu	Ile	Ile	Asn	Pro	Lys	Ile	Cys
465					470						475				480
Ser	Glu	Arg	Thr	Leu	Lys	Gln	Ile	Gln	Glu	Ile	Leu	Tyr	Lys	Val	Val
				485						490				495	
His	Glu	Gly	Leu	Ala	Ala	Pro	Ala	Gly	Ser	Lys	Gln	Phe	Ala	Val	Ser
			500					505					510		
Gly	Lys	Thr	Gly	Thr	Ala	Gln	Ile	Ser	Gln	Gly	Ala	Ala	Gly	Tyr	Lys
		515					520					525			
Ser	Gly	Arg	Val	Asn	Tyr	Leu	Val	Ser	Phe	Cys	Gly	Tyr	Phe	Pro	Ser
	530					535					540				
Glu	Ala	Pro	Lys	Tyr	Ser	Cys	Ile	Val	Ser	Ile	Gln	Lys	Pro	Gly	Leu
545					550						555				560
Pro	Ala	Ser	Gly	Gly	Leu	Met	Ala	Gly	Ser	Val	Phe	Ser	Lys	Ile	Ala
				565					570					575	
Glu	Arg	Val	Tyr	Ala	Lys	Asp	Leu	Arg	Leu	Asp	Ile	Arg	Asn	Ala	Ile
			580					585					590		
Asp	Thr	Asn	Thr	Val	Val	Ile	Pro	Asp	Val	Lys	Ala	Gly	Glu	Met	Ile

595                      600                      605  
 Glu Ala Arg Gln Val Leu Glu Gly Leu Asn Ile Gln Thr Gln Ala Glu  
 610                      615                      620  
 Phe Lys Ala Lys Lys Asn Lys Glu Val Trp Gly His Ala Gln Ala Ala  
 625                      630                      635                      640  
 Pro Lys Ala Val Ile Leu Gln Gly Lys Glu Gln Leu Arg Asn Phe Val  
 645                      650                      655  
 Pro Ser Val Ile Gly Met Gly Ala Lys Asp Ala Val Tyr Leu Leu Glu  
 660                      665                      670  
 Ser Lys Gly Leu Lys Val Thr Leu Ser Gly Val Gly Lys Val Lys Ser  
 675                      680                      685  
 Gln Ser Leu Pro Gln Gly Thr Thr Ile Lys Lys Gly Gln Thr Ile Ser  
 690                      695                      700  
 Ile His Leu Asn  
 705

&lt;210&gt; 6576

&lt;211&gt; 376

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6576

Ala Pro Asp Val Ile Gln Ser Lys Ser Val Asn Arg Leu Thr Val Asn  
 1                      5                      10                      15  
 Lys Val Met Leu Tyr Tyr Leu Phe Glu Trp Leu His Lys Leu Asn Phe  
 20                      25                      30  
 Pro Gly Ala Gly Met Phe Gly Tyr Thr Ser Phe Arg Ala Leu Met Ala  
 35                      40                      45  
 Ile Ile Leu Ala Leu Leu Ile Ser Ser Ile Trp Gly Asp Lys Phe Ile  
 50                      55                      60  
 Asn Leu Leu Lys Arg Lys Gln Ile Thr Glu Thr Gln Arg Asp Ala Lys  
 65                      70                      75                      80  
 Ile Asp Pro Phe Gly Val Asn Lys Val Gly Val Pro Ser Met Gly Gly  
 85                      90                      95  
 Val Ile Ile Ile Val Ala Ile Leu Ile Pro Cys Leu Leu Leu Gly Lys  
 100                      105                      110  
 Leu His Asn Ile Tyr Met Ile Leu Met Leu Ile Thr Thr Val Trp Leu  
 115                      120                      125  
 Gly Ser Leu Gly Phe Ala Asp Tyr Ile Lys Ile Phe Lys Lys Asp  
 130                      135                      140  
 Lys Glu Gly Leu His Gly Lys Phe Lys Ile Ile Gly Gln Val Gly Leu  
 145                      150                      155                      160  
 Gly Leu Ile Val Gly Leu Thr Leu Tyr Leu Ser Pro Asp Val Val Ile  
 165                      170                      175  
 Arg Glu Asn Ile Glu Val Gln Lys Ser Glu Asn Glu Ile Glu Val Ile  
 180                      185                      190  
 His Gly Thr His Asp Leu Lys Ser Thr Gln Thr Thr Ile Pro Val Phe  
 195                      200                      205  
 Lys Ser Asn Asn Leu Glu Tyr Ala Asp Leu Val Gly Phe Met Gly Glu  
 210                      215                      220  
 His Ala Gln Thr Ala Gly Trp Ile Leu Phe Val Ile Ile Thr Ile Phe  
 225                      230                      235                      240  
 Val Val Thr Ala Val Ser Asn Gly Ala Asn Leu Asn Asp Gly Met Asp  
 245                      250                      255  
 Gly Met Ala Ala Gly Asn Ser Ala Ile Gly Leu Thr Leu Gly Ile  
 260                      265                      270  
 Leu Ala Tyr Val Ser Ser His Ile Glu Phe Ala Gly Tyr Leu Asn Ile  
 275                      280                      285  
 Met Tyr Ile Pro Gly Ser Glu Glu Leu Val Ile Phe Ile Cys Ala Phe

290	Ile Gly Ala Leu	295	Ile Gly Phe Leu Trp Tyr Asn Ala Tyr Pro Ala Gln	300	
305	Val Phe Met Gly Asp Thr Gly Ser Leu Thr Ile Gly Gly Ile Ile Ala	310		315	320
		325		330	335
Val Phe Ala Ile Ile Ile His Lys Glu Leu Leu Ile Pro Ile Leu Cys		340		345	350
Gly Ile Phe Leu Val Glu Asn Arg His Ala Ile Gly Ile Thr Ser Ile		355		360	365
Ile Lys Pro Glu Lys Glu Arg Val		370		375	

<210> 6577  
 <211> 89  
 <212> PRT  
 <213> B.fragilis

<400> 6577	Asn Arg Leu Val Glu Met Ala Asn His Lys Ser Ser Ile Lys Arg Ile
1	5 10 15
Arg Gln Glu Glu Thr Arg Arg Leu Arg Asn Arg Tyr Tyr Gly Lys Thr	
	20 25 30
Met Arg Asn Ala Val Arg Lys Leu Arg Ser Thr Thr Asp Lys Ala Glu	
	35 40 45
Ala Thr Ala Met Tyr Pro Gly Ile Val Lys Met Val Asp Lys Leu Ala	
	50 55 60
Lys Thr Asn Val Ile His Lys Asn Lys Ala Asn Asn Leu Lys Ser Lys	
65	70 75 80
Leu Ala Ile Tyr Ile Asn Lys Leu Ala	
	85

<210> 6578  
 <211> 286  
 <212> PRT  
 <213> B.fragilis

<400> 6578	Lys Arg Thr Val Asn Phe Ala Gln Ser Phe His Leu Lys Arg Met Ala
1	5 10 15
Asp Asp Ser Leu Phe Leu Ile Asp Ile Asp Lys Ile Leu Gln Thr Lys	
	20 25 30
Ala Pro Lys His Tyr Lys Tyr Ile Pro Lys Phe Val Val Ser Tyr Leu	
	35 40 45
Lys Arg Ile Val His Gln Glu Glu Leu Asn Val Phe Leu Arg Asp Ser	
	50 55 60
Lys Asp Lys Val Gly Val Asp Phe Leu Gly Ala Cys Leu Glu Phe Leu	
65	70 75 80
Asp Ala Lys Leu Glu Val Lys Gly Leu Glu Asn Ile Pro Lys Asp Gly	
	85 90 95
Leu Tyr Thr Phe Val Ser Asn His Pro Leu Gly Gly Gln Asp Gly Val	
	100 105 110
Ser Leu Gly Tyr Ile Leu Gly Arg His Phe Asp Gly Lys Val Lys Tyr	
	115 120 125
Leu Val Asn Asp Leu Leu Met Asn Leu His Gly Leu Ala Pro Leu Cys	
	130 135 140
Ile Pro Ile Asn Lys Thr Gly Lys Gln Ala Lys Asp Phe Pro Lys Met	
145	150 155 160
Val Glu Ala Gly Phe Lys Ser Asp Asp Gln Leu Ile Met Phe Pro Ala	
	165 170 175

Gly Leu Cys Ser Arg Arg Gln Asn Gly Val Ile Arg Asp Leu Asp Trp  
 180 185 190  
 Lys Lys Thr Phe Ile Val Lys Ser Val Gln Phe Gln Arg Asp Val Ile  
 195 200 205  
 Pro Val His Phe Glu Gly Arg Asn Ser Asp Phe Phe Tyr Asn Leu Ala  
 210 215 220  
 Asn Leu Cys Lys Ala Leu Gly Ile Lys Phe Asn Ile Ala Met Leu Tyr  
 225 230 235 240  
 Leu Ala Asp Glu Met Leu Lys Asn Arg His Lys Thr Phe Thr Val Thr  
 245 250 255  
 Phe Gly Lys Pro Ile Pro Trp Gln Thr Phe Asp Lys Ser Lys Thr Pro  
 260 265 270  
 Ala Glu Trp Ala Gln Tyr Val Lys Asp Ile Val Tyr Lys Leu  
 275 280 285

<210> 6579  
 <211> 71  
 <212> PRT  
 <213> B.fragilis

<400> 6579  
 Cys Phe His Ser Ser Gly Pro Val Phe Val Leu Arg Leu Phe Ser Val  
 1 5 10 15  
 Leu Leu Val Pro Leu Pro Val Arg Val Thr Phe Pro Gly Val Thr Leu  
 20 25 30  
 Leu Leu Ser Arg Glu Ala Glu Leu Ser Leu Trp Asp Thr Pro Leu Leu  
 35 40 45  
 Thr Ser Ser Leu Arg Pro Glu Leu Glu Arg Met Val Thr Asp Pro Lys  
 50 55 60  
 Ser Glu Arg Arg Cys Val Leu  
 65 70

<210> 6580  
 <211> 115  
 <212> PRT  
 <213> B.fragilis

<400> 6580  
 Gly Ser Gly Ser Phe Ser Pro Val Val Lys Thr Ala Glu Leu Asp Ser  
 1 5 10 15  
 Thr Thr Val Val Arg Phe Asn Gln Met Gln Phe His Pro Tyr Leu Lys  
 20 25 30  
 Ala Glu Lys Lys Lys Gln Gln Trp His Phe Thr Ala Ala Val Asp Lys  
 35 40 45  
 Pro Trp Phe Pro Ala Asp Gln Leu Phe Gly Ser Leu Pro Lys Gly Leu  
 50 55 60  
 Phe Ser Asn Leu Glu Gly Ile Lys Thr Ser Gly Glu Leu Ala Tyr His  
 65 70 75 80  
 Phe Phe Leu Asp Ala Asn Phe Ala Leu Leu Asn Ser Leu Lys Met Glu  
 85 90 95  
 Ile Glu Pro Glu Gly Lys Glu Phe Pro His Gly Lys Leu Arg Gly His  
 100 105 110  
 Lys Ser Gly  
 115

<210> 6581  
 <211> 281  
 <212> PRT  
 <213> B.fragilis

&lt;400&gt; 6581

Arg Val Lys Ser Pro Val Pro Leu Leu Asn Pro Gly Gly Tyr Gln Thr  
 1 5 10 15  
 Asn Arg Val Gly Leu Leu Phe Leu Leu His Asn Lys Ile Thr Tyr Lys  
 20 25 30  
 Ile Ser Ala Leu Met Lys Met Ala Leu Ser Asp Phe Ala Leu Arg Lys  
 35 40 45  
 Lys Gly Ile Tyr Gly Ile Leu His Val Ile Ile Leu Leu Ser Leu  
 50 55 60  
 Phe Leu Val Ile Ser Ile Ser Ile Asp Thr Phe Lys Gly Ile Pro Phe  
 65 70 75 80  
 Tyr Thr Gln Ser Val Tyr Met Lys Val Gln Leu Trp Ile Cys Val Leu  
 85 90 95  
 Phe Leu Phe Asp Phe Ile Leu Glu Leu Phe Leu Ser Lys Asn Lys Trp  
 100 105 110  
 His Tyr Leu Ser Thr His Phe Ile Phe Leu Leu Val Ala Ile Pro Tyr  
 115 120 125  
 Gln Asn Ile Ile Ser Tyr Met Gly Trp Thr Phe Ser Pro Glu Val Thr  
 130 135 140  
 Tyr Met Ile Arg Phe Val Pro Leu Val Arg Gly Gly Tyr Ala Met Ala  
 145 150 155 160  
 Ile Val Val Gly Trp Leu Thr Tyr Asn Lys Ala Ser Gly Leu Phe Val  
 165 170 175  
 Ser Tyr Leu Thr Met Leu Leu Ala Thr Val Tyr Phe Ser Ser Leu Ala  
 180 185 190  
 Phe Phe Val Leu Glu His Lys Val Asn Pro Leu Val Thr Gly Tyr Gly  
 195 200 205  
 Asp Ala Leu Trp Trp Ala Phe Met Asp Val Thr Thr Val Gly Ser Asn  
 210 215 220  
 Ile Ile Ala Val Thr Val Thr Gly Arg Val Leu Ser Val Leu Leu Ala  
 225 230 235 240  
 Ala Leu Gly Met Met Met Phe Pro Ile Phe Thr Val Tyr Val Thr Ser  
 245 250 255  
 Leu Ile Gln Lys Lys Asn Lys Glu Lys Glu Glu Tyr Tyr Lys Gln Leu  
 260 265 270  
 Glu Ala Ala Asp Glu Ser Lys Pro Lys  
 275 280

&lt;210&gt; 6582

&lt;211&gt; 325

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6582

Gln Leu Leu Pro Leu Asp Trp Glu Ile Arg Cys Lys Asp Arg Phe Leu  
 1 5 10 15  
 Pro Val Gly Cys Asn Ala Ser Cys Ile Phe Leu Leu Ser Ser Phe Arg  
 20 25 30  
 Leu Ile Ala Ile Leu Phe Val Leu Leu His Pro Lys Ile Arg Arg Met  
 35 40 45  
 Asn His Val Thr Thr Tyr Ile Arg Gln Ala Leu His Asp Ile Tyr Pro  
 50 55 60  
 Pro Gly Glu Leu Arg Ser Leu Thr Lys Ile Ile Cys Cys Asp Leu Leu  
 65 70 75 80  
 Gly Gln Asp Ala Ile Asp Tyr Tyr Leu Gly Lys Asp Ile Thr Leu Ser  
 85 90 95  
 Ala Asn Glu Gln Cys Asp Leu Glu Ser Ile Val Glu Arg Leu Lys Lys  
 100 105 110

Asn	Glu	Pro	Ile	Gln	Tyr	Ile	Gln	Gly	Glu	Thr	Cys	Phe	Tyr	Gly	Ser
		115					120					125			
Met	Phe	Arg	Val	Ala	Pro	Gly	Val	Leu	Ile	Pro	Arg	Pro	Glu	Thr	Glu
		130				135					140				
Glu	Leu	Val	Asp	Leu	Val	Val	Lys	Glu	Ala	Ala	Thr	Gly	Thr	Arg	Leu
		145			150					155					160
Leu	Asp	Ile	Gly	Thr	Gly	Ser	Gly	Cys	Ile	Ala	Ile	Ser	Leu	Ala	Lys
			165						170					175	
His	Ile	Pro	Gln	Ala	Val	Val	Thr	Ala	Trp	Asp	Val	Ser	Glu	Glu	Ala
		180						185					190		
Leu	Ala	Ile	Ala	Gly	Glu	Asn	Asn	Arg	Glu	Leu	Lys	Ala	Gly	Val	His
		195				200						205			
Phe	Glu	Lys	Met	Asp	Val	Leu	Ser	Ala	Glu	Pro	Val	Gly	Asp	Asp	Gln
		210				215					220				
Tyr	Asp	Met	Ile	Val	Ser	Asn	Pro	Pro	Tyr	Val	Thr	Glu	Ser	Glu	Lys
		225			230					235					240
Asn	Glu	Met	Glu	Pro	Asn	Val	Leu	Asp	Trp	Glu	Pro	Arg	Leu	Ala	Leu
			245					250						255	
Phe	Val	Pro	Asp	Asn	Asp	Pro	Leu	Arg	Phe	Tyr	Arg	Arg	Ile	Ala	Ser
		260						265					270		
Leu	Gly	Arg	Lys	Met	Leu	Arg	Leu	His	Gly	Arg	Leu	Tyr	Phe	Glu	Ile
		275					280					285			
Asn	Arg	Ala	Tyr	Gly	Glu	Glu	Val	Leu	Gln	Met	Leu	His	Glu	Gln	Gly
		290				295					300				
Tyr	Glu	Glu	Leu	Arg	Leu	Ile	Lys	Asp	Ile	Ser	Gly	Asn	Asp	Arg	Ile
		305			310					315					320
Val	Thr	Ala	Lys	Arg											
				325											

&lt;210&gt; 6583

&lt;211&gt; 191

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6583

Ser	Leu	Asn	Thr	Lys	Ile	Asp	Met	Asp	Asp	Gln	Ile	Lys	Gln	Ile	Ala
1				5					10					15	
Glu	Arg	Leu	Arg	Gly	Leu	Arg	Asp	Val	Leu	Glu	Leu	Thr	Ala	Glu	Asp
		20						25					30		
Ile	Ala	Arg	Asp	Cys	Glu	Ile	Ser	Ala	Glu	Glu	Tyr	Arg	Leu	Ala	Glu
		35					40					45			
Thr	Gly	Asp	Tyr	Asp	Ile	Ser	Val	Ser	Met	Leu	Gln	Lys	Ile	Ala	Arg
		50				55					60				
Lys	Tyr	Gly	Ile	Ala	Leu	Asp	Ala	Leu	Met	Phe	Gly	Glu	Glu	Pro	Lys
		65			70					75				80	
Met	Ser	Ser	Tyr	Phe	Leu	Thr	Arg	Ala	Gly	Lys	Gly	Thr	Ser	Ile	Glu
				85					90					95	
Arg	Thr	Lys	Ala	Tyr	Lys	Tyr	Gln	Ser	Leu	Ala	Ala	Gly	Phe	Met	Asn
		100						105					110		
Arg	Asn	Ala	Asp	Pro	Phe	Ile	Val	Thr	Val	Glu	Pro	Lys	Pro	Asp	Ile
		115					120						125		
Glu	Pro	Ile	His	Tyr	Asn	Ser	His	Ser	Gly	Gln	Glu	Phe	Asn	Leu	Val
		130				135					140				
Leu	Glu	Gly	Arg	Met	Met	Ile	Ser	Ile	Asp	Gly	Lys	Asp	Leu	Ile	Leu
		145			150					155				160	
Asn	Glu	Gly	Asp	Ser	Leu	Tyr	Phe	Asn	Ser	Lys	Leu	Pro	His	Gly	Met
			165						170					175	
Lys	Ala	Leu	Asp	Gly	Lys	Thr	Val	Arg	Phe	Leu	Ala	Val	Ile	Met	
			180					185					190		



<210> 6584  
 <211> 62  
 <212> PRT  
 <213> B.fragilis

<220>  
 <221> UNSURE  
 <222> (56), (57), (58)  
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 6584  
 Tyr Gly Val Thr Val Val Pro Thr Lys Tyr Gly Ala Asp Asp Ser Ile  
 1 5 10 15  
 Asn Leu Val Leu Lys Asp Arg Thr Thr Thr Asn Glu Met Ser Tyr Lys  
 20 25 30  
 Glu Gln Ile Asp Leu Asn Arg Ile Pro Lys His Val Val Val Thr Ala  
 35 40 45  
 Glu Cys Asn Ala Cys Ser Ile Xaa Xaa Xaa Pro Ala Ser Pro  
 50 55 60

<210> 6585  
 <211> 308  
 <212> PRT  
 <213> B.fragilis

<400> 6585  
 Gln Ala Asp Ala Ala Ile Cys Phe Ser Ala Ala Asn His Ser Tyr Val  
 1 5 10 15  
 Cys Phe Leu Phe Ile Phe Ala Val Asn Arg Met Lys Ile Met Ser Ile  
 20 25 30  
 Glu Leu Gly Lys Phe Asn Gln Leu Glu Val Val Lys Gln Val Asp Phe  
 35 40 45  
 Gly Met Tyr Leu Asp Gly Gly Glu Glu Gly Glu Ile Leu Leu Pro Thr  
 50 55 60  
 Arg Tyr Val Pro Glu Asp Cys Lys Leu Gly Asp Trp Leu Asn Val Phe  
 65 70 75 80  
 Leu Tyr Leu Asp Asn Glu Glu Arg Leu Ile Ala Thr Thr Leu Thr Pro  
 85 90 95  
 Leu Val Gln Val Gly Glu Phe Ala Cys Leu Glu Val Ser Trp Val Asn  
 100 105 110  
 Gln Phe Gly Ala Phe Leu Asn Trp Gly Leu Met Lys Asp Leu Phe Val  
 115 120 125  
 Pro Phe Ser Glu Gln Lys Met Lys Met Gln Val Gly Asn Lys Tyr Val  
 130 135 140  
 Ile His Ala His Ile Asp Asp Glu Ser Phe Arg Ile Val Ala Ser Ala  
 145 150 155 160  
 Lys Val Asp Arg Tyr Leu Ser Lys Glu Lys Ala Ser Tyr Gln Pro Gly  
 165 170 175  
 Glu Glu Val Asn Ile Leu Ile Trp Gln Lys Thr Asp Leu Gly Phe Lys  
 180 185 190  
 Ala Ile Ile Glu Asn Met Tyr Ser Gly Leu Leu Tyr Asp Ser Glu Ile  
 195 200 205  
 Phe Gln Thr Leu His Thr Gly Asp Val Leu Lys Ala Tyr Val Lys Gln  
 210 215 220  
 Val Arg Glu Asp Gly Lys Ile Asp Leu Ile Leu Gln Lys Pro Gly Phe  
 225 230 235 240  
 Glu Lys Ile Asp Asp Phe Ser Lys Thr Leu His Arg Tyr Ile Thr Glu  
 245 250 255

His Gly Gly Trp Ile Gly Leu Thr Asp Lys Ser Pro Ala Glu Glu Ile  
 260 265 270  
 Tyr Asp Thr Phe Gly Val Ser Lys Lys Thr Phe Lys Lys Ala Val Gly  
 275 280 285  
 Asp Leu Tyr Lys Lys Arg Leu Ile Leu Leu His Glu Asp Gly Ile Glu  
 290 295 300  
 Leu Val Arg Pro  
 305

<210> 6586  
 <211> 70  
 <212> PRT  
 <213> B.fragilis

<400> 6586  
 Ser Cys Pro Ala Ala Asp Tyr Pro His Arg Cys Arg Val Ile Phe Thr  
 1 5 10 15  
 Trp Asn Gly Lys Gln Tyr Ala Ala Tyr Thr Phe Val Phe His Ser His  
 20 25 30  
 Phe Asp Arg Cys Gly Phe Gln Glu Ala Phe Asp Thr Cys Tyr Phe Pro  
 35 40 45  
 Trp Thr Ala Arg Glu His Phe Asn Leu Arg Asn Leu Ser Ala Tyr Tyr  
 50 55 60  
 His Leu Leu Leu Ile Val  
 65 70

<210> 6587  
 <211> 457  
 <212> PRT  
 <213> B.fragilis

<400> 6587  
 Tyr Val Ile Tyr Asp Thr Ile Leu Ile Ala Met Ala Gln Lys Leu Trp  
 1 5 10 15  
 Glu Lys Ser Val Glu Val Asn Lys Asp Ile Glu Arg Phe Thr Val Gly  
 20 25 30  
 Arg Asp Arg Glu Met Asp Leu Tyr Leu Ala Lys His Asp Val Leu Gly  
 35 40 45  
 Ser Met Ala His Ile Thr Met Leu Glu Ser Ile Gly Leu Leu Thr Lys  
 50 55 60  
 Glu Glu Leu Ala Gln Leu Leu Thr Glu Leu Lys Asp Ile Tyr Ala Ser  
 65 70 75 80  
 Ala Glu Arg Gly Glu Phe Val Ile Glu Glu Gly Val Glu Asp Val His  
 85 90 95  
 Ser Gln Val Glu Leu Met Leu Thr Arg Arg Leu Gly Asp Val Gly Lys  
 100 105 110  
 Lys Ile His Ser Gly Arg Ser Arg Asn Asp Gln Val Leu Leu Asp Leu  
 115 120 125  
 Lys Leu Phe Thr Arg Thr Gln Ile Arg Glu Val Ala Glu Ala Val Glu  
 130 135 140  
 Gln Leu Phe His Val Leu Ile Arg Gln Ser Glu Arg Tyr Lys Asn Val  
 145 150 155 160  
 Leu Met Pro Gly Tyr Thr His Leu Gln Ile Ala Met Pro Ser Ser Phe  
 165 170 175  
 Gly Leu Trp Phe Gly Ala Tyr Ala Glu Ser Leu Val Asp Asp Met Leu  
 180 185 190  
 Phe Leu Gln Ala Ala Phe Lys Met Cys Asn Lys Asn Pro Leu Gly Ser  
 195 200 205  
 Ala Ala Gly Tyr Gly Ser Ser Phe Pro Leu Asn Arg Thr Met Thr Thr

210	215	220
Glu Leu Leu Gly Phe Asp Ser Leu Asn Tyr Asn Val Val Tyr Ala Gln		
225	230	235
Met Gly Arg Gly Lys Met Glu Arg Asn Val Ala Phe Ala Leu Ala Thr		
	245	250
Leu Ala Gly Thr Ile Ser Lys Leu Ala Phe Asp Ala Cys Met Phe Asn		
	260	265
Ser Gln Asn Phe Gly Phe Val Lys Leu Pro Asp Glu Cys Thr Thr Gly		
	275	280
Ser Ser Ile Met Pro His Lys Lys Asn Pro Asp Val Phe Glu Leu Thr		
	290	295
Arg Ala Lys Cys Asn Lys Leu Gln Ser Leu Pro Gln Gln Ile Met Met		
305	310	315
Ile Ala Asn Asn Leu Pro Ser Gly Tyr Phe Arg Asp Leu Gln Ile Ile		
	325	330
Lys Glu Val Phe Leu Pro Ala Phe Gln Glu Leu Lys Asp Cys Leu Gln		
	340	345
Met Thr Thr Tyr Ile Met Asn Glu Ile Lys Val Asn Glu His Ile Leu		
	355	360
Asp Asp Asp Lys Tyr Leu Phe Ile Phe Ser Val Glu Glu Val Asn Arg		
370	375	380
Leu Ala Arg Glu Gly Met Pro Phe Arg Asp Ala Tyr Lys Lys Val Gly		
385	390	395
Leu Asp Ile Glu Ala Gly His Phe Ser His Asp Lys Gln Val His His		
	405	410
Thr His Glu Gly Ser Ile Gly Asn Leu Cys Asn Asp Glu Ile Ser Ala		
	420	425
Leu Met Gln Arg Thr Ile Glu Gly Phe Asn Phe Gln Gly Met Glu Gln		
	435	440
Ala Glu Lys Thr Leu Leu Gly Arg Lys		445
450	455	

&lt;210&gt; 6588

&lt;211&gt; 161

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6588

Ser Asn Cys Asn Arg Gln Thr Met Asn Thr Ile Thr Glu Glu Glu Ala		
1	5	10
Leu Asn Arg Met Ala Ala Tyr Cys Ser Ala Ala Glu His Cys Lys Ala		
	20	25
Glu Val Asn Glu Lys Leu Gln Lys Trp Gly Leu Pro Tyr Glu Val Ile		
	35	40
Asn Arg Ile Ile Asp Arg Leu Val Val Glu Lys Phe Ile Asp Glu Glu		
50	55	60
Arg Tyr Cys Arg Ala Phe Val Asn Asp Lys Phe Arg Phe Ala Lys Trp		
65	70	75
Gly Lys Met Lys Ile Thr Gln Ala Leu Tyr Met Lys Lys Ile Pro Arg		
	85	90
Glu Val Thr Tyr Arg Tyr Leu Asn Asp Ile Asp Arg Glu Glu Tyr Leu		
	100	105
Ala Ile Leu Gly Asp Leu Ile Ala Ala Lys Arg Lys Ser Ile His Ala		
	115	120
Lys Asp Glu Phe Glu Leu Asn Gly Lys Leu Ile Arg Phe Ala Met Ser		
	130	135
Arg Gly Phe Glu Met Asp Asp Ile Arg Arg Cys Val Gln Val Glu Glu		
145	150	155
Glu		160

<400> 6589

2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048 2049 2050 2051 2052 2053 2054 2055 2056 2057 2058 2059 2060 2061 2062 2063 2064 2065 2066 2067 2068 2069 2070 2071 2072 2073 2074 2075 2076 2077 2078 2079 2080 2081 2082 2083 2084 2085 2086 2087 2088 2089 2090 2091 2092 2093 2094 2095 2096 2097 2098 2099 2100 2101 2102 2103 2104 2105 2106 2107 2108 2109 2110 2111 2112 2113 2114 2115 2116 2117 2118 2119 2120 2121 2122 2123 2124 2125 2126 2127 2128 2129 2130 2131 2132 2133 2134 2135 2136 2137 2138 2139 2140 2141 2142 2143 2144 2145 2146 2147 2148 2149 2150 2151 2152 2153 2154 2155 2156 2157 2158 2159 2160 2161 2162 2163 2164 2165 2166 2167 2168 2169 2170 2171 2172 2173 2174 2175 2176 2177 2178 2179 2180 2181 2182 2183 2184 2185 2186 2187 2188 2189 2190 2191 2192 2193 2194 2195 2196 2197 2198 2199 2200 2201 2202 2203 2204 2205 2206 2207 2208 2209 2210 2211 2212 2213 2214 2215 2216 2217 2218 2219 2220 2221 2222 2223 2224 2225 2226 2227 2228 2229 2230 2231 2232 2233 2234 2235 2236 2237 2238 2239 2240 2241 2242 2243 2244 2245 2246 2247 2248 2249 2250 2251 2252 2253 2254 2255 2256 2257 2258 2259 2260 2261 2262 2263 2264 2265 2266 2267 2268 2269 2270 2271 2272 2273 2274 2275 2276 2277 2278 2279 2280 2281 2282 2283 2284 2285 2286 2287 2288 2289 2290 2291 2292 2293 2294 2295 2296 2297 2298 2299 2300 2301 2302 2303 2304 2305 2306 2307 2308 2309 2310 2311 2312 2313 2314 2315 2316 2317 2318 2319 2320 2321 2322 2323 2324 2325 2326 2327 2328 2329 2330 2331 2332 2333 2334 2335 2336 2337 2338 2339 2340 2341 2342 2343 2344 2345 2346 2347 2348 2349 2350 2351 2352 2353 2354 2355 2356 2357 2358 2359 2360 2361 2362 2363 2364 2365 2366 2367 2368 2369 2370 2371 2372 2373 2374 2375 2376 2377 2378 2379 2380 2381 2382 2383 2384 2385 2386 2387 2388 2389 2390 2391 2392 2393 2394 2395 2396 2397 2398 2399 2400 2401 2402 2403 2404 2405 2406 2407 2408 2409 2410 2411 2412 2413 2414 2415 2416 2417 2418 2419 2420 2421 2422 2423 2424 2425 2426 2427 2428 2429 2430 2431 2432 2433 2434 2435 2436 2437 2438 2439 2440 2441 2442 2443 2444 2445 2446 2447 2448 2449 2450 2451 2452 2453 2454 2455 2456 2457 2458 2459 2460 2461 2462 2463 2464 2465 2466 2467 2468 2469 2470 2471 2472 2473 2474 2475 2476 2477 2478 2479 2480 2481 2482 2483 2484 2485 2486 2487 2488 2489 2490 2491 2492 2493 2494 2495 2496 2497 2498 2499 2500 2501 2502 2503 2504 2505 2506 2507 2508 2509 2510 2511 2512 2513 2514 2515 2516 2517 2518 2519 2520 2521 2522 2523 2524 2525 2526 2527 2528 2529 2530 2531 2532 2533 2534 2535 2536 2537 2538 2539 2540 2541 2542 2543 2544 2545 2546 2547 2548 2549 2550 2551 2552 2553 2554 2555 2556 2557 2558 2559 2560 2561 2562 2563 2564 2565 2566 2567 2568 2569 2570 2571 2572 2573 2574 2575 2576 2577 2578 2579 2580 2581 2582 2583 2584 2585 2586 2587 2588 2589 2590 2591 2592 2593 2594 2595 2596 2597 2598 2599 2600 2601 2602 2603 2604 2605 2606 2607 2608 2609 2610 2611 2612 2613 2614 2615 2616 2617 2618 2619 2620 2621 2622 2623 2624 2625 2626 2627 2628 2629 2630 2631 2632 2633 2634 2635 2636 2637 2638 2639 2640 2641 2642 2643 2644 2645 2646 2647 2648 2649 2650 2651 2652 2653 2654 2655 2656 2657 2658 2659 2660 2661 2662 2663 2664 2665 2666 2667 2668 2669 2670 2671 2672 2673 2674 2675 2676 2677 2678 2679 2680 2681 2682 2683 2684 2685 2686 2687 2688 2689 2690 2691 2692 2693 2694 2695 2696 2697 2698 2699 2700 2701 2702 2703 2704 2705 2706 2707 2708 2709 2710 2711 2712 2713 2714 2715 2716 2717 2718 2719 2720 2721 2722 2723 2724 2725 2726 2727 2728 2729 2730 2731 2732 2733 2734 2735 2736 2737 2738 2739 2740 2741 2742 2743 2744 2745 2746 2747 2748 2749 2750 2751 2752 2753 2754 2755 2756 2757 2758 2759 2760 2761 2762 2763 2764 2765 2766 2767 2768 2769 2770 2771 2772 2773 2774 2775 2776 2777 2778 2779 2780 2781 2782 2783 2784 2785 2786 2787 2788 2789 2790 2791 2792 2793 2794 2795 2796 2797 2798 2799 2800 2801 2802 2803 2804 2805 2806 2807 2808 2809 2810 2811 2812 2813 2814 2815 2816 2817 2

<210> 6590  
 <211> 166  
 <212> PRT  
 <213> B.fragilis

<400> 6590

Gly	Phe	Ser	Lys	Gly	Ile	Tyr	Gln	Tyr	Asp	Glu	Arg	Ile	Gly	Ile	Glu
1				5					10					15	
Cys	Phe	Cys	Asp	Gly	Ala	Arg	Ile	Arg	Phe	Ala	Pro	Asp	Leu	Leu	Leu
			20					25					30		
Glu	Asn	Met	Lys	Thr	Leu	Ile	Lys	Thr	Ala	Gly	Thr	Asn	Phe	Leu	Ile
		35					40					45			
Ile	Asp	Gly	His	His	Cys	Thr	Glu	Lys	Thr	Ala	Val	Ile	Glu	Thr	Val
	50					55					60				
Asn	Ser	Met	Met	Leu	Gln	Thr	Val	Glu	Gly	Val	Ile	Tyr	Leu	Phe	Pro
65					70					75					80
Cys	Trp	Thr	Gln	Thr	Pro	Ala	Ala	Phe	Thr	Arg	Leu	Arg	Ala	Lys	Gly
				85					90					95	
Ala	Phe	Leu	Val	Ser	Ala	Asp	Tyr	Asp	Gly	Thr	Ser	Val	Gly	Gly	Leu
			100					105					110		
Lys	Ile	Phe	Ser	Glu	Lys	Gly	Gly	Ile	Cys	Arg	Leu	Ser	Asn	Pro	Trp
		115					120						125		
Arg	Gly	Arg	Lys	Leu	Arg	Val	Thr	Glu	Asn	Gly	Lys	Pro	Val	Ser	Val
	130					135					140				
Lys	Glu	Gln	Asn	Asn	Val	Cys	Ser	Phe	Ile	Thr	Arg	Lys	Gly	Ser	Thr
145					150					155					160
Tyr	Thr	Ile	Val	Gly	Leu										
				165											

<210> 6591  
 <211> 533  
 <212> PRT  
 <213> B.fragilis

<400> 6591

Leu	Met	Ala	Asn	Ile	Lys	Gln	Ala	Val	Lys	Leu	Gly	Val	Phe	Thr	Leu
1				5					10					15	
Ala	Ile	Met	Asn	Val	Thr	Ala	Val	Val	Ser	Leu	Arg	Gly	Leu	Pro	Ala
			20					25					30		
Glu	Ala	Val	Tyr	Gly	Met	Ser	Ser	Ala	Phe	Tyr	Tyr	Leu	Phe	Ala	Ala
		35					40					45			
Ile	Val	Phe	Leu	Ile	Pro	Thr	Ser	Leu	Val	Ala	Ala	Glu	Leu	Ala	Ala
	50					55					60				
Met	Phe	Gln	Asp	Lys	Gln	Gly	Gly	Val	Phe	Arg	Trp	Val	Gly	Glu	Ala
65					70					75					80
Tyr	Gly	Lys	Lys	Leu	Gly	Phe	Leu	Ala	Ile	Trp	Val	Gln	Trp	Ile	Glu
				85					90					95	
Ser	Thr	Ile	Trp	Tyr	Pro	Thr	Val	Leu	Thr	Phe	Gly	Ala	Val	Ser	Ile
			100					105					110		
Ala	Phe	Ile	Gly	Met	Asn	Asp	Thr	His	Asp	Met	Thr	Leu	Ala	Ser	Asn
		115					120						125		
Lys	Tyr	Tyr	Thr	Leu	Ala	Val	Val	Leu	Ile	Ile	Tyr	Trp	Leu	Ala	Thr
	130					135					140				
Phe	Ile	Ser	Leu	Lys	Gly	Met	Gly	Trp	Val	Gly	Lys	Val	Ala	Lys	Ile
145					150					155					160
Gly	Gly	Met	Val	Gly	Thr	Ile	Ile	Pro	Ala	Ala	Leu	Leu	Ile	Ile	Leu
				165					170					175	

Gly Ile Val Tyr Leu Ala Ser Gly Gly His Ser Asn Leu Asp Phe His  
 180 185 190  
 Ser Ser Phe Phe Pro Asp Leu Thr Asn Phe Asp Asn Val Val Leu Ala  
 195 200 205  
 Ala Ser Ile Phe Leu Phe Tyr Ala Gly Met Glu Met Gly Gly Ile His  
 210 215 220  
 Val Lys Asp Met Gln Asn Pro Ser Lys Asn Tyr Pro Lys Ala Val Phe  
 225 230 235 240  
 Ile Gly Ala Leu Ile Thr Val Ile Ile Phe Val Leu Gly Thr Phe Ser  
 245 250 255  
 Leu Gly Ile Ile Ile Pro Ala Lys Asp Ile Ser Leu Thr Gln Ser Leu  
 260 265 270  
 Leu Val Gly Phe Asp Asn Tyr Phe Arg Tyr Ile His Ala Ser Trp Leu  
 275 280 285  
 Ser Pro Ile Ile Ala Ile Ala Leu Ala Phe Gly Val Leu Ala Gly Val  
 290 295 300  
 Leu Thr Trp Val Ala Gly Pro Ser Lys Gly Ile Phe Ala Val Gly Lys  
 305 310 315 320  
 Ala Gly Tyr Met Pro Pro Phe Phe Gln Lys Thr Asn Lys Leu Gly Val  
 325 330 335  
 Gln Lys Asn Ile Leu Phe Val Gln Gly Ala Val Thr Val Leu Ser  
 340 345 350  
 Leu Leu Phe Val Val Met Pro Ser Val Gln Ser Phe Tyr Gln Ile Leu  
 355 360 365  
 Ser Gln Leu Thr Val Ile Leu Tyr Leu Val Met Tyr Leu Leu Met Phe  
 370 375 380  
 Ser Gly Ala Ile Tyr Leu Arg Tyr Asn Met Lys Lys Ala Asn Arg Pro  
 385 390 395 400  
 Phe Arg Ile Gly Lys Lys Gly Asn Gly Leu Met Trp Ile Val Gly Gly  
 405 410 415  
 Leu Gly Phe Leu Gly Ser Leu Leu Ala Phe Ile Leu Ser Phe Ile Pro  
 420 425 430  
 Pro Ser Gln Ile Ser Thr Gly Ser Asn Thr Val Trp Phe Ser Val Leu  
 435 440 445  
 Ile Ile Gly Ala Leu Val Val Ile Ala Pro Phe Ile Ile Tyr Ala  
 450 455 460  
 Ala Lys Lys Pro Ser Trp Ala Asp Pro Asn Ser Thr Phe Glu Pro Phe  
 465 470 475 480  
 His Trp Glu Thr Gln Ala Lys Pro Gln Val Ala Pro Ala Thr Thr Thr  
 485 490 495  
 Thr Ala Gly Pro Ala Thr Ser Ser Ala Thr Thr Ile Gly Ser Thr Thr  
 500 505 510  
 Ser Ala Pro Ser Thr Gly Ser Gly Ser Val Ser Ser Asp Lys Asp Thr  
 515 520 525  
 Pro Gln Lys Gln Ser  
 530

<210> 6592  
 <211> 188  
 <212> PRT  
 <213> B.fragilis

<400> 6592  
 Met Gln Ser Glu Asp Gly Ala Phe Tyr Phe His Arg Gly Phe Leu Pro  
 1 5 10 15  
 Glu Ala Met Arg Lys Ala Leu Tyr Gln Asp Leu Lys Val Lys Arg Phe  
 20 25 30  
 Ala Arg Gly Gly Ser Thr Ile Thr Met Gln Leu Val Lys Ser Val Phe  
 35 40 45

Leu Ser Arg Asn Lys Asn Ile Ala Arg Lys Leu Glu Glu Ala Leu Ile  
 50 55 60  
 Val Trp Leu Ile Glu Thr Glu Arg Leu Thr Ser Lys Glu Arg Met Tyr  
 65 70 75 80  
 Glu Val Tyr Leu Asn Ile Val Glu Trp Gly Pro Leu Val Tyr Gly Val  
 85 90 95  
 Gln Glu Ala Ala Thr Tyr Tyr Phe Lys Lys Arg Pro Ser Gln Leu Thr  
 100 105 110  
 Ala Glu Glu Ser Ile Phe Leu Ala Ser Ile Ile Pro Lys Pro Lys His  
 115 120 125  
 Phe Arg Asn Ser Phe Asn Asn Asp Met Gln Leu Lys Glu Ser Leu Glu  
 130 135 140  
 Gly Tyr Tyr Arg Leu Ile Thr Glu Arg Leu Val Lys Lys Gly Ile Ile  
 145 150 155 160  
 Ser Glu Val Ala Ala Asp Ser Ile Arg Pro Glu Ile Asn Val Thr Gly  
 165 170 175  
 Glu Ala Lys Lys Asp Leu Gln Arg Asp Ser Ile Gln  
 180 185

&lt;210&gt; 6593

&lt;211&gt; 221

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6593

Lys Leu Asn Asp Met Arg Lys Val Ile Ile Thr Leu Cys Phe Leu Phe  
 1 5 10 15  
 Val Ala Phe Val Ala Gln Ala Gly Arg Ile Ser Gly Ile Asn Ile Gln  
 20 25 30  
 Ser Ser Gly Glu Ala Ile Leu Val Phe Val Asp Gly Glu Gln Ile Cys  
 35 40 45  
 Thr Pro Thr Glu Thr Cys Phe Ile Ala Asn Tyr Ser Gly Arg His Arg  
 50 55 60  
 Ile Glu Val Tyr Ala Val Arg Tyr Ile Pro Arg Thr Gly Gln Ser Val  
 65 70 75 80  
 Lys Gly Asp Leu Leu Phe Gln Glu Trp Val Ser Asn Pro Gly Met Asn  
 85 90 95  
 Ile Arg Asp Ile Arg Val Gly Tyr Asn Asp Arg Pro Asp Phe Cys Pro  
 100 105 110  
 Asp Arg Pro Val Arg Pro Gly Tyr Asp Val Val Met Asn Arg Thr Glu  
 115 120 125  
 Phe Asp Arg Phe Leu Arg Ser Val Lys Asp Lys His Phe Asp Ser Asp  
 130 135 140  
 Arg Asn Lys Leu Ile Glu Thr Thr Leu Val Ser Thr Gly Phe Thr Ser  
 145 150 155 160  
 Asp Gln Cys Leu Gln Leu Val Asn Leu Phe Ser Phe Asp Ser Glu Lys  
 165 170 175  
 Ile Lys Leu Met Gln Ala Met Tyr Pro Arg Ile Val Asp Lys Pro Asn  
 180 185 190  
 Phe Tyr Leu Val Ile Glu Ser Leu Thr Phe Gln Ser Asp Lys Asn Lys  
 195 200 205  
 Met Asn Glu Phe Val Arg Lys Tyr His Asn Gln Arg Asn  
 210 215 220

&lt;210&gt; 6594

&lt;211&gt; 347

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6594

Lys Met Lys Glu Glu Lys Tyr Met Arg Arg Cys Ile Gln Leu Ala Lys  
 1 5 10 15  
 Asn Gly Leu Cys Asn Val Ser Pro Asn Pro Met Val Gly Ala Val Ile  
 20 25 30  
 Val Cys Glu Gly Gln Ile Ile Gly Glu Gly Tyr His Ile Arg Cys Gly  
 35 40 45  
 Glu Ala His Ala Glu Val Asn Ala Ile Arg Ser Val Lys Asp Leu Ser  
 50 55 60  
 Leu Leu Lys His Ser Thr Ile Tyr Val Ser Leu Glu Pro Cys Ser His  
 65 70 75 80  
 His Gly Lys Thr Pro Pro Cys Ala Asp Leu Ile Ile Glu Lys Gln Ile  
 85 90 95  
 Pro Arg Ile Val Ile Gly Cys Gln Asp Pro Phe Ser Lys Val Ala Gly  
 100 105 110  
 Lys Gly Ile Gln Lys Leu Arg Asp Ala Gly Cys Glu Val Ile Val Gly  
 115 120 125  
 Val Leu Glu Thr Glu Cys Arg Glu Leu Ile Arg Lys Phe Ile Thr Phe  
 130 135 140  
 His Thr Leu His Arg Pro Tyr Ile Val Leu Lys Trp Ala Glu Ser Ala  
 145 150 155 160  
 Asp Gly Phe Ile Asp Leu Glu Arg Thr Glu Gly Gln Pro Val Ile Leu  
 165 170 175  
 Ser Thr Pro Leu Thr Ser Met Leu Val His Lys Lys Arg Ala Glu Ser  
 180 185 190  
 Asp Ala Ile Met Val Gly Thr Arg Thr Ala Leu Leu Asp Asn Pro Ala  
 195 200 205  
 Leu Thr Val Arg Asn Trp His Gly His Asn Pro Val Arg Ile Val Met  
 210 215 220  
 Asp Arg Asn His Ser Leu Pro Gln Thr Ser His Leu Ser Asp Asn Ser  
 225 230 235 240  
 Val Ser Thr Leu Val Phe Thr Glu His Pro Arg Ala Gly Lys Glu Asn  
 245 250 255  
 Leu Glu Tyr Ile Thr Leu Asn Tyr Gln Thr Asp Ile Leu Pro Gln Ile  
 260 265 270  
 Leu Ser Ala Leu Tyr Gln Arg Asn Leu Gln Ser Leu Met Ile Glu Gly  
 275 280 285  
 Gly Arg Ile Leu Leu Glu Ser Phe Ile Arg Ser Gly Ile Trp Asp Glu  
 290 295 300  
 Val Ile Ile Glu Lys Ser Asp Lys Leu Leu Tyr Ser Gly Val Lys Ala  
 305 310 315 320  
 Pro Glu Ile Ser Asp Lys Ile Ser Tyr Ser Glu Glu Lys His Phe Cys  
 325 330 335  
 Thr Thr Phe Arg His Tyr Leu Lys Arg Asn Thr  
 340 345

&lt;210&gt; 6595

&lt;211&gt; 252

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6595

Asp Met Lys Arg Ile Leu Ile Phe Phe Leu Val Ile Gly Ile Thr Ala  
 1 5 10 15  
 Ile Ser Ser Val Ser Met Ala Ala Met Ser Asn Ser Arg Ile Arg Lys  
 20 25 30  
 Glu Thr Arg Phe Leu Thr Asp Lys Met Ala Tyr Glu Leu Asn Leu Ser  
 35 40 45  
 Thr Gly Gln Tyr Asn Asp Val Tyr Glu Ile Asn Tyr Asp Phe Ile Tyr



50	55	60
Ser Ile Arg Tyr Leu Met	Asp Asp Val Ile Arg Gly Glu Glu Trp Ala	
65	70	75
Leu Asp Lys Tyr Tyr Arg Thr Leu Asp	Ile Arg Asn Asp Asp Leu Arg	80
	85	90
Trp Val Leu Thr Ala Ser Gln Tyr Arg	Phe Ile Gly Val Asp Tyr	95
	100	105
Phe Tyr Arg Pro Val Tyr Ala Ser Gly Gly	Ser Trp Ser Phe Arg Ile	110
	115	120
Tyr Ile Arg Tyr Thr Asn His Asn His Phe Tyr	Phe Gly Lys Pro Tyr	125
	130	135
His Tyr Asn Ser Tyr Cys Gly Gly His Tyr Arg Thr	His Tyr His Asn	140
145	150	155
Ser Tyr Tyr Arg Gly Arg Tyr Arg His Asp Phe Tyr	Ser Gly Ser His	160
	165	170
Ser Ile Arg Asp His Arg Asn Tyr Asn Thr His Arg Arg	Ser Asp Phe	175
	180	185
Gly Ser Val Thr Ile Arg Ser Asn Ser Gly Arg Arg Asp	Glu Val Arg	190
	195	200
Arg Gly Val Ser Gln Arg Glu Ser Ser Ala Ser Arg Asp	Asn Asn Arg	205
	210	215
Val Thr Pro Gly Asn Val Thr Arg Thr Gly Arg Gly Thr Arg	Ser Thr	220
225	230	235
Glu Asn Asn Arg Arg Thr Asn Thr Gly Pro Glu Glu		240
	245	250

<210> 6596  
 <211> 163  
 <212> PRT  
 <213> B.fragilis

<400> 6596

Leu Lys Tyr Arg Lys Lys Ser His Ser Asp Arg Ile Cys Ser Asp Cys	
1	5
Ser Ser Phe Phe Phe Ile Ser Lys Ile Asn Lys Met Thr Lys Phe Glu	10
	15
	20
Ser Ser Val Lys Val Ile Pro Tyr Ser Gln Glu Arg Val Tyr Glu Lys	25
	30
	35
Leu Ala Asp Leu Ser Asn Leu Glu Ala Ile Lys Asp Arg Leu Pro Glu	40
	45
	50
Asp Lys Val Lys Asn Met Ser Phe Asp Thr Asp Thr Leu Ser Phe Asn	55
65	60
Val Asp Pro Val Gly Gln Leu Thr Leu Arg Ile Ile Glu Arg Glu Pro	70
	75
	80
	85
Ser Lys Cys Ile Lys Phe Glu Thr Thr Asn Ser Pro Leu Pro Phe Asn	90
	95
	100
Met Trp Ile Gln Leu Val Ala Val Ser Glu Glu Glu Cys Lys Leu Lys	105
	110
	115
Val Thr Ile Gly Leu Glu Ile Asn Pro Phe Met Lys Ala Met Val Gln	120
	125
	130
Lys Pro Leu Asn Glu Gly Leu Glu Lys Met Ala Asp Met Leu Ser Met	135
145	140
	145
	150
	155
	160
Ile Gln Tyr	

<210> 6597  
 <211> 326  
 <212> PRT  
 <213> B.fragilis

&lt;400&gt; 6597

Gly Arg Arg Gly Met Ile Lys Ala Gly Ile Ile Gly Gly Ala Gly Tyr  
 1 5 10 15  
 Thr Ala Gly Glu Leu Ile Arg Leu Leu Ile Asn His Pro Glu Thr Glu  
 20 25 30  
 Ile Val Phe Ile Asn Ser Thr Ser Asn Ala Gly Asn Lys Ile Thr Asp  
 35 40 45  
 Val His Glu Gly Leu Tyr Gly Glu Cys Asp Leu Ala Phe Thr Asp Glu  
 50 55 60  
 Leu Pro Leu Glu Asp Ile Asp Val Leu Phe Phe Cys Thr Ala His Gly  
 65 70 75 80  
 Asp Thr Lys Lys Phe Met Glu Ser His Asn Ile Pro Glu Glu Leu Lys  
 85 90 95  
 Ile Ile Asp Leu Ser Met Asp Tyr Arg Ile Ala Ser Pro Asp His Asp  
 100 105 110  
 Phe Ile Tyr Gly Leu Pro Glu Leu Asn Arg Arg Ala Thr Cys Thr Ala  
 115 120 125  
 Lys His Val Ala Asn Pro Gly Cys Phe Ala Thr Cys Ile Gln Leu Gly  
 130 135 140  
 Leu Leu Pro Leu Ala Lys His Leu Met Leu Asn Glu Asp Val Met Val  
 145 150 155 160  
 Asn Ala Ile Thr Gly Ser Thr Gly Ala Gly Val Lys Pro Gly Ala Thr  
 165 170 175  
 Ser His Phe Ser Trp Arg Asn Asn Asn Met Ser Val Tyr Lys Ala Phe  
 180 185 190  
 Glu His Gln His Val Pro Glu Ile Lys Gln Ser Leu Lys Gln Leu Gln  
 195 200 205  
 Asn Ser Phe Asp Ala Glu Ile Asp Phe Ile Pro Tyr Arg Gly Asp Phe  
 210 215 220  
 Pro Arg Gly Ile Phe Ala Thr Leu Val Val Lys Thr Lys Val Ala Leu  
 225 230 235 240  
 Glu Glu Ile Val Arg Met Tyr Glu Glu Tyr Tyr Ala Lys Asp Ser Phe  
 245 250 255  
 Val His Ile Val Asp Lys Asn Ile Asp Leu Lys Gln Val Val Asn Thr  
 260 265 270  
 Asn Lys Cys Leu Ile His Leu Glu Lys His Gly Asp Lys Leu Leu Ile  
 275 280 285  
 Ile Ser Cys Ile Asp Asn Leu Lys Gly Ala Ser Gly Gln Ala Val  
 290 295 300  
 His Asn Met Asn Leu Met Phe Asn Leu Glu Glu Thr Val Gly Leu Arg  
 305 310 315 320  
 Leu Lys Pro Ser Ala Phe  
 325

&lt;210&gt; 6598

&lt;211&gt; 228

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6598

Leu Lys Pro Ile Arg Ile Met Lys Lys Ile His Val Ser Ala Ile Leu  
 1 5 10 15  
 Ile Leu Leu Val Val Met Ser Ser Cys Ala Gly Leu Ile Leu Asn Phe  
 20 25 30  
 Lys Asn Ser Gln Leu Met Ser Ile Gln Lys Gly Met Thr Gln Gln Glu  
 35 40 45  
 Val Lys Ala Ile Leu Gly Lys Pro Asn Tyr Arg Arg Phe Asp Gly Ala  
 50 55 60

Met Glu Glu Trp Glu Tyr Arg Gly Tyr Leu Ser Lys Ala Gly His Ser  
65 70 75 80  
Val Ile Cys Val Asn Phe Ile Asp Asn Arg Val Val Gly Leu Asp Ser  
85 90 95  
Phe Arg Asp Gly Ala Pro Thr Ala Pro Ala Pro Ser Phe Ser Leu  
100 105 110  
Gly Ile Gly Gly Thr Val Thr Ala Ser Asp Ile Ala Pro Ala Cys Asp  
115 120 125  
Tyr Arg Ala Met Arg Asn Asp Glu Phe Ala Arg Phe Leu Asn Asp Val  
130 135 140  
Lys Ser Lys Thr Phe Asp Ser Asp Arg Thr Asp Phe Ile Glu Lys Ala  
145 150 155 160  
Thr Arg Ser Thr Gly Phe Thr Ser Glu Gln Cys Cys Arg Leu Ile Lys  
165 170 175  
Leu Tyr Ser Phe Asp Asp Asp Arg Thr Lys Val Leu Lys Ile Leu Tyr  
180 185 190  
Pro Ser Val Val Asp Lys Asp Asn Phe Ser Ala Ala Ile Asp Gly Leu  
195 200 205  
Asp Phe Leu Ser Asn Gln Asp Thr Val Lys Asn Phe Val Arg Asn Tyr  
210 215 220  
Asn Arg Ile Lys  
225

<210> 6599

<211> 260

<212> PRT

<213> B.fragilis

<400> 6599

Leu Tyr Asn Met Lys Val Ala Ile Ile Gly Ala Gly Asn Met Gly Gly  
1 5 10 15  
Ser Ile Ala Cys Gly Leu Ala Lys Gly Lys Leu Ile Pro Ala Ser Asp  
20 25 30  
Ile Ile Val Ser Asn Pro Ser Ile Gly Lys Leu Glu Ala Leu Lys Lys  
35 40 45  
Glu Phe Pro Ser Ile Ala Ile Thr Arg Asn Asn Ala Glu Ala Ala Thr  
50 55 60  
Gly Ala Asp Ile Val Ile Leu Ala Val Lys Pro Trp Leu Ile Arg Gly  
65 70 75 80  
Val Leu Arg Glu Met Lys Leu Arg Ser Lys Gln Ile Leu Val Ser Val  
85 90 95  
Ala Ala Gly Ile Ser Phe Glu Gln Leu Ala His Asp Val Val Glu Pro  
100 105 110  
Glu Met Pro Met Phe Arg Ile Val Pro Asn Thr Ala Ile Ser Glu Leu  
115 120 125  
Gln Ser Met Thr Leu Ile Ala Ser Arg Asn Ala Gly Gln Glu Leu Glu  
130 135 140  
Thr Leu Met Val Asn Leu Phe Ser Glu Met Gly Met Ala Met Ile Leu  
145 150 155 160  
Pro Glu Asp Lys Leu Glu Ala Ala Thr Ala Leu Thr Ser Cys Gly Ile  
165 170 175  
Ala Tyr Val Leu Lys Tyr Ile Gln Ala Ala Met Gln Ala Gly Ile Glu  
180 185 190  
Met Gly Ile Arg Pro Ser Asp Ala Met Asp Met Ile Ala Gln Ser Val  
195 200 205  
Lys Gly Ala Ala Glu Leu Ile Leu Asn Asn Asp Thr His Pro Ser Val  
210 215 220  
Glu Ile Asp Lys Val Thr Thr Pro Gly Gly Ile Thr Ile Lys Gly Ile  
225 230 235 240

Asn Glu Leu Glu His Asn Gly Phe Thr Ser Ala Ile Ile Lys Ala Met  
 245 250 255  
 Lys Ala Ser Arg  
 260

<210> 6600  
 <211> 230  
 <212> PRT  
 <213> B.fragilis

<400> 6600

Ser Arg Ser Ile Ser Val Phe Leu His Pro Val Ile Ile Ile Val Ser  
 1 5 10 15  
 Leu Val Met Lys Asn Leu Glu Arg Leu Phe Ala Glu Lys Leu Leu Lys  
 20 25 30  
 Ile Lys Ala Ile Lys Leu Gln Pro Ala Asn Pro Phe Thr Trp Ala Ser  
 35 40 45  
 Gly Trp Lys Ser Pro Phe Tyr Cys Asp Asn Arg Lys Thr Leu Ser Tyr  
 50 55 60  
 Pro Ser Leu Arg Ser Phe Val Lys Phe Glu Ile Thr Arg Leu Val Leu  
 65 70 75 80  
 Glu Arg Phe Gly Gln Val Asp Ala Ile Ala Gly Val Ala Thr Gly Ala  
 85 90 95  
 Ile Pro Gln Gly Ala Leu Val Ala Asp Ala Leu Asn Leu Pro Phe Val  
 100 105 110  
 Tyr Val Arg Ser Thr Pro Lys Asp His Gly Leu Glu Asn Leu Ile Glu  
 115 120 125  
 Gly Glu Leu Arg Pro Gly Met Lys Val Val Val Val Glu Asp Leu Ile  
 130 135 140  
 Ser Thr Gly Gly Ser Ser Leu Lys Ala Val Glu Ala Ile Arg Arg Asp  
 145 150 155 160  
 Gly Cys Glu Val Ile Gly Met Val Ala Ala Tyr Thr Tyr Gly Phe Pro  
 165 170 175  
 Val Ala Glu Gln Ala Phe Lys Asp Ala Lys Val Pro Leu Val Thr Leu  
 180 185 190  
 Thr Asn Tyr Glu Ala Val Leu Asp Val Ala Leu Arg Thr Gly Tyr Ile  
 195 200 205  
 Glu Glu Glu Asp Ile Ala Thr Leu Asn Glu Trp Arg Lys Asp Pro Ala  
 210 215 220  
 His Trp Glu Thr Gly Lys  
 225 230

<210> 6601  
 <211> 458  
 <212> PRT  
 <213> B.fragilis

<400> 6601

Ile Asn Thr Ile Phe Gln Met Arg Ile Lys Phe Leu Ser Val Ile Val  
 1 5 10 15  
 Ser Phe Phe Leu Val Ser Phe Ala Val Thr Ser Cys Leu Asp Thr Glu  
 20 25 30  
 Glu Ile Glu Tyr Ser Pro Asp Ala Thr Ile His Ala Phe Ala Leu Asp  
 35 40 45  
 Thr Ile His Gly Val Asn Tyr Lys Phe Thr Ile Asp Gln Leu Gly Pro  
 50 55 60  
 Asp Gly Val Gly Leu Ile Tyr Asn Gln Asp Ser Leu Pro Val Gly Ser  
 65 70 75 80  
 Asp Thr Ile Ile Asp Arg Ile Leu Ile Lys Thr Leu Thr Thr Thr Ser

85 90 95  
 Gly Ile Ile Thr Ala Lys Asn Ala Glu Gly Gln Asp Thr Leu Phe Asn  
 100 105 110  
 Tyr Ser Asp Ser Ile Asp Phe Arg Gly Thr Met Gln Lys Pro Met Arg  
 115 120 125  
 Ile Lys Val Trp Ala Ala Asp Met Gln Tyr Thr Lys Glu Tyr Thr Ile  
 130 135 140  
 Ser Val Arg Val His Gln Gln Asp Pro Asp Ser Met Asn Trp Thr Lys  
 145 150 155 160  
 Met Thr Asp Asn Phe Ala Asn Tyr Ser Gly Tyr Gln Lys Ser Val Thr  
 165 170 175  
 Leu Asn Glu Asp Leu Leu Ile Tyr Thr Ser Asn Thr Thr Ala Tyr Gln  
 180 185 190  
 Ser Ser Gly Asp Val Ile Ser Lys Gly Arg Ser Trp Thr Pro Val Ser  
 195 200 205  
 Ile Thr Gly Leu Pro Asp Asn Ile Lys Leu Ser Ser Ile Ile Ser Phe  
 210 215 220  
 Gly Gly Lys Leu Tyr Ala Thr Asn Gly Glu Ser Ala Tyr Val Ser Ser  
 225 230 235 240  
 Asp Gly Ala Leu Trp Asn Val Ala Thr Asp Leu Asn Lys Asn Gly Lys  
 245 250 255  
 Val Glu Met Leu Ile Ala Pro Phe Pro Lys Asn Glu Gly Asn Leu Leu  
 260 265 270  
 Gly Ile Ser Gly Ile Ala Gly Ile Asn Asn Gly Asp Gln Ser Thr  
 275 280 285  
 Phe Ala Ile Thr Asn Pro Glu Ala Thr Ala Trp Asn Ile Gly Ser Glu  
 290 295 300  
 Thr Val Gly Ala Asp Phe Pro Leu Glu Asn Leu Ser Ala Thr Ser Tyr  
 305 310 315 320  
 Leu Thr Ala Thr Gly Ile Gln Thr Ile Ala Val Met Gly Asn Asn Arg  
 325 330 335  
 Asn Ala Asn Asp Thr Thr Ser Ile Ala Trp Thr Ser Gln Asp Gly Leu  
 340 345 350  
 Leu Trp Ile Pro Leu Lys Thr Ser Ser Thr Ala Tyr Cys Pro Lys  
 355 360 365  
 Leu Asp Asn Pro Ser Phe Phe Tyr Tyr Asp Asn Ala Phe Leu Ala Phe  
 370 375 380  
 Gly Gly Asn Phe Glu Thr Ile Tyr Thr Ser Glu Ala Gly Ile Ala Trp  
 385 390 395 400  
 Tyr Lys Ala Asn Lys Lys Ile Phe Leu Pro Ala Glu Phe Lys Asp Arg  
 405 410 415  
 Gly Asn Asn Tyr Ser Thr Val Val Asp Lys Asn Asn Phe Ile Trp Val  
 420 425 430  
 Ile Trp Ser Asn Gly Gly Ala Asn Glu Val Trp Arg Gly Arg Leu Asn  
 435 440 445  
 Lys Phe Gly Phe Glu Arg Gln Asn Asn Asn  
 450 455

&lt;210&gt; 6602

&lt;211&gt; 203

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6602

Leu Thr Thr Ile Ile Leu Tyr Thr Lys Ser Thr Met Asp Thr Gln Gln  
 1 5 10 15  
 Ile Asp Val Met Val Ala Asp Ala Ser His Glu Val Tyr Val Asp Thr  
 20 25 30  
 Ile Leu Glu Thr Ile Arg Asn Ala Ala Lys Val Arg Gly Thr Gly Ile

35	40	45
Ala Glu Arg Thr His Glu Tyr Val Ala Thr Lys Met Lys Glu Gly Lys		
50	55	60
Ala Ile Ile Ala Leu Cys Gly Asp Val Phe Ala Gly Phe Thr Tyr Ile		
65	70	75
Glu Ser Trp Gly Asn Lys Gln Tyr Val Ala Thr Ser Gly Leu Ile Val		
85	90	95
His Pro Asp Phe Arg Gly Leu Gly Leu Ala Lys Arg Ile Lys Gln Ala		
100	105	110
Ser Phe Gln Leu Ala Arg Leu Arg Trp Pro Arg Ala Lys Ile Phe Ser		
115	120	125
Leu Thr Ser Gly Ala Ala Val Met Lys Met Asn Thr Glu Leu Gly Tyr		
130	135	140
Val Pro Val Thr Phe Asn Glu Leu Thr Asp Asp Glu Ala Phe Trp Lys		
145	150	155
Gly Cys Glu Gly Cys Ile Asn His Glu Ile Leu Met Ala Lys Asp Arg		
165	170	175
Lys Phe Cys Ile Cys Thr Ala Met Leu Tyr Asp Pro Thr Asp Pro His		
180	185	190
Asn Ile Lys Lys Glu Gln Glu Arg Asn Asn Ile		
195	200	

&lt;210&gt; 6603

&lt;211&gt; 377

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6603

Glu Glu Thr Met Asn Leu Phe Asp Val Tyr Pro Leu Phe Asp Ile Asn		
1	5	10
Ile Ile Lys Gly Lys Gly Cys His Val Trp Asp Glu Asn Gly Thr Glu		
20	25	30
Tyr Leu Asp Leu Tyr Gly Gly His Ala Val Ile Ser Ile Gly His Ala		
35	40	45
His Pro His Tyr Val Asp Met Ile Ser Lys Gln Val Ala Thr Leu Gly		
50	55	60
Phe Tyr Ser Asn Ser Val Ile Asn Lys Leu Gln Gln Val Ala Glu		
65	70	75
Arg Leu Gly Lys Ile Ser Gly Tyr Glu Asp Tyr Ser Leu Phe Leu Ile		
85	90	95
Asn Ser Gly Ala Glu Ala Asn Glu Asn Ala Leu Lys Leu Ala Ser Phe		
100	105	110
His Asn Gly Arg Thr Lys Val Ile Ser Phe Gly Lys Ala Phe His Gly		
115	120	125
Arg Thr Ser Leu Ala Val Glu Ala Thr Asp Asn Pro Lys Ile Ile Ala		
130	135	140
Pro Ile Asn Ala Asn Gly His Ile Thr Tyr Leu Pro Leu Asn Asp Ile		
145	150	155
Glu Ala Ala Lys Thr Glu Leu Ala Lys Glu Asp Ile Cys Ala Val Ile		
165	170	175
Ile Glu Gly Ile Gln Gly Val Gly Gly Ile Lys Ile Pro Thr Pro Glu		
180	185	190
Phe Leu Gln Glu Leu Arg Lys Ala Cys Thr Glu His Gly Thr Ile Leu		
195	200	205
Ile Leu Asp Glu Ile Gln Ser Gly Tyr Gly Arg Ser Gly Lys Phe Phe		
210	215	220
Ala His Gln Tyr Ala Gly Ile Lys Pro Asp Ile Ile Thr Val Ala Lys		
225	230	235
Gly Ile Gly Asn Gly Phe Pro Met Ala Gly Val Leu Ile Ser Pro Met		

				245					250					255			
Phe	Thr	Pro	Val	Tyr	Gly	Met	Leu	Gly	Thr	Thr	Phe	Gly	Gly	Asn	His		
			260					265					270				
Leu	Ala	Cys	Ser	Ala	Ala	Leu	Ala	Val	Met	Asp	Val	Ile	Glu	Gln	Glu		
		275					280					285					
Asn	Leu	Val	Glu	Asn	Ala	Ala	Asn	Ile	Gly	Ser	Tyr	Leu	Leu	Glu	Glu		
	290					295				300							
Leu	Lys	Lys	Phe	Lys	Glu	Ile	Lys	Glu	Val	Arg	Gly	Cys	Gly	Leu	Met		
305					310					315					320		
Ile	Gly	Met	Glu	Phe	Asp	Gln	Pro	Val	Lys	Glu	Ile	Arg	Ser	Arg	Leu		
				325					330					335			
Ile	His	Glu	Gln	Lys	Val	Phe	Thr	Gly	Ala	Ser	Gly	Thr	Asn	Val	Ile		
			340					345					350				
Arg	Leu	Leu	Pro	Pro	Leu	Cys	Leu	Ser	Lys	Glu	Glu	Ala	Asp	Glu	Phe		
		355				360						365					
Leu	Ala	Arg	Leu	Arg	Lys	Val	Leu	Gly									
	370					375											

&lt;210&gt; 6604

&lt;211&gt; 413

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6604

Lys	Tyr	Met	Met	Ile	Tyr	Ile	Ile	Phe	Ser	Val	Phe	Ile	Ile	Ile	Ile		
1				5				10					15				
Leu	Phe	Ile	Cys	Ala	Arg	Tyr	Trp	Tyr	Leu	Trp	Arg	Lys	Ile	Ser	Val		
			20					25					30				
Gln	Lys	Asn	Glu	Trp	Val	Ala	Gln	Thr	Lys	Glu	Ser	Asp	Thr	Ile	Leu		
		35				40						45					
Arg	Ser	Met	Asn	Ala	Cys	Phe	Ile	Leu	Ile	Asn	Ser	Asp	Leu	Val	Val		
	50				55					60							
Ile	Arg	Thr	Asn	Tyr	Tyr	Asp	Leu	Ser	Gly	Ile	Ser	Glu	Glu	Pro	Glu		
65				70					75					80			
Ser	Ser	Gly	Arg	Val	Gly	Asp	Leu	Leu	Asn	Cys	Lys	Asn	Ala	Val	Arg		
			85					90					95				
Ser	Gly	Gly	Gly	Cys	Gly	Ala	His	Lys	Asn	Cys	Glu	Asn	Cys	Met	Ile		
		100				105						110					
Arg	His	Thr	Ile	Glu	Asn	Ala	Phe	Cys	His	Lys	Lys	Gly	Phe	His	Lys		
	115					120						125					
Leu	Glu	Ala	Ser	Met	Arg	Leu	Ser	Ser	Asp	His	Gln	Gln	Ile	Ile			
	130					135			140								
Pro	Cys	Asp	Val	Ser	Val	Ser	Gly	Thr	Tyr	Leu	Asn	Asn	Glu	Gly	His		
145				150					155					160			
Glu	Gln	Met	Leu	Leu	Thr	Val	Tyr	Asp	Ile	Thr	Glu	Leu	Lys	Asn	Met		
			165					170						175			
Gln	Arg	Leu	Leu	Asn	Ile	Glu	Lys	Glu	Asn	Ala	Val	Ser	Ala	Glu	Lys		
		180					185						190				
Leu	Lys	Ser	Ala	Phe	Ile	Ala	Asn	Met	Ser	His	Glu	Ile	Arg	Thr	Pro		
	195					200						205					
Leu	Asn	Ala	Ile	Val	Gly	Phe	Ser	Gly	Leu	Leu	Ala	Ser	Ala	Asp	Asp		
	210				215						220						
Asp	Thr	Glu	Lys	Lys	Met	Tyr	Leu	Asp	Ile	Val	Ala	Glu	Asn	Asn	Asp		
225				230					235					240			
Arg	Leu	Leu	Gln	Ile	Val	Thr	Asp	Val	Leu	Asp	Leu	Ser	Lys	Ile	Glu		
			245					250					255				
Ser	Gly	Ser	Leu	Asp	Phe	His	Tyr	Ser	Glu	Phe	Asp	Val	Asn	Asp	Leu		
		260				265							270				
Leu	Cys	Ala	Leu	His	Gly	Ile	Leu	Asn	Ile	Arg	Leu	Lys	Asp	Lys	Pro		

275                      280                      285  
 Glu Ile Lys Leu Ile Cys Lys Ala Gly Thr Asp Glu Trp Ile Ile Tyr  
 290                      295                      300  
 Ser Glu Gln His Arg Ile Val Gln Ile Ile Thr Asn Leu Val His Asn  
 305                      310                      315                      320  
 Ala Met Lys Phe Thr His Ser Gly Glu Ile Cys Phe Gly Cys Arg Pro  
 325                      330                      335  
 Gln Gly Glu Asp Glu Ile Tyr Phe Tyr Val Ser Asp Thr Gly Ile Gly  
 340                      345                      350  
 Ile Pro Ala Gly Glu Gln Asp Lys Ile Phe Asp Arg Phe Thr Lys Leu  
 355                      360                      365  
 Asp His Glu Val Pro Gly Thr Gly Leu Gly Leu Thr Leu Ser Gln Thr  
 370                      375                      380  
 Ile Val Gln Asn Leu Gly Gly Glu Met Gly Val Glu Ser Glu Val Thr  
 385                      390                      395                      400  
 Lys Gly Ser Thr Phe Trp Phe Thr Leu Pro Leu Lys Ser  
 405                      410

<210> 6605  
 <211> 659  
 <212> PRT  
 <213> B.fragilis

<400> 6605

Leu Ser Val Ile Cys Ile Thr Glu Lys Tyr Asn Arg Leu Leu Asn Thr  
 1                      5                      10                      15  
 His Ala Leu Asn Met Lys Leu Lys Phe Leu Phe Leu Phe Leu Ser Tyr  
 20                      25                      30  
 Ser Leu Ser Ile His Ser Gln Asn Asn Leu Leu Tyr Ala Asp Ser Ser  
 35                      40                      45  
 Lys Asp Ser Leu Phe Phe Glu Gln Lys Lys Ala Leu Leu Thr Ala Thr  
 50                      55                      60  
 Trp His Lys Pro Phe Ser Tyr Ser Ser Ile Gln Ser Asn His Ala Pro  
 65                      70                      75                      80  
 Leu Gly Pro Tyr Met Gly Asn Gly Asp Val Gly Val Val Ala Phe Thr  
 85                      90                      95  
 Ser Asp Asn Ser Gln Thr Leu Lys Ile Ser Lys Val Asp Phe Val Thr  
 100                      105                      110  
 Asp Gly Trp Thr Asp Trp Ala Gly Ser Gly Pro Ala Ala Leu Pro Ile  
 115                      120                      125  
 Gly Gly Val Asn Ile Thr Val Asn Ser Pro Val Tyr Ser Gly Phe Val  
 130                      135                      140  
 Thr Val Asn Arg Ala Asp Pro Ser Gly Phe Ser Tyr Gln Met Asp Gln  
 145                      150                      155                      160  
 Leu Asn Ser Glu Leu Arg Met Thr Thr Ala Thr Ala Gln Gln Val Lys  
 165                      170                      175  
 Met Val Thr Trp Met Gly Val Asn Glu Asn Met Ile Ile Thr Glu Leu  
 180                      185                      190  
 Thr Thr Ser Ser Lys Thr Pro Val Pro Ile Ser Val Asp Thr Tyr Ala  
 195                      200                      205  
 Asp Asn Gln Ser Ala Ser Tyr Thr Thr Thr Ala Gln Val Asn Gly Gln  
 210                      215                      220  
 Ile Ala Gln Val Thr Arg Gln Thr Lys Thr Asp Ala Val Arg Trp Ile  
 225                      230                      235                      240  
 Ser Cys Ala Gly Ile Ser Thr Lys Ile Val Gly Val Met Ser Lys Pro  
 245                      250                      255  
 Glu Cys Leu Ser Glu Ser Met Val Arg Ser Asn Phe Gln Leu Thr Ala  
 260                      265                      270  
 Ser Asp Thr Leu Leu Val Val Val Tyr Val Ser Gly Gly Gly Lys Gly



275 280 285  
 Asn Asp Pro Gln Leu Pro Thr Ala Tyr Asn Lys Leu Leu Thr Leu Asn  
 290 295 300  
 Lys Ala Asp Val Thr Gln Leu Lys Met Ala Lys Lys Ala Trp Trp Lys  
 305 310 315 320  
 Asp Met Trp Thr Arg Ser Tyr Val Glu Thr Asn Asp Glu Leu Leu Asn  
 325 330 335  
 Arg His Tyr Leu Ser Ser Ile Tyr Leu Leu Ala Ser Ala Tyr Asn Glu  
 340 345 350  
 His Ser Pro Val Ser Gly Gly Met Tyr Gly Val Trp Asn Met Asp Asp  
 355 360 365  
 Lys Met Met Tyr His Gly Asp Ile His Leu Asn Tyr Asn Ser Gln Ala  
 370 375 380  
 Gly Phe Tyr Ser Ala Phe Ser Ser Asn Arg Pro Glu Ile Ala Leu Pro  
 385 390 395 400  
 Phe Tyr Lys Thr Ile Glu Leu Leu Ile Pro Glu Gly Lys Arg Arg Ala  
 405 410 415  
 Lys Glu Glu Met Gly Ile Met His Pro Ser Trp Glu Gly Lys Ser Cys  
 420 425 430  
 Arg Gly Ile Leu Phe Pro Val Gly Ala Leu Gly Ile Gly Val Phe Tyr  
 435 440 445  
 Asn Tyr Trp Trp Gln Gln Thr Met Asn Ala Pro Phe Asn Val Pro Leu  
 450 455 460  
 Phe Ser Trp Tyr Tyr Glu Tyr Thr Gly Asp Leu Asn Phe Leu Arg Tyr  
 465 470 475 480  
 Arg Ala Tyr Pro Tyr Ile Arg Leu Cys Gly Asp Phe Tyr Glu Asp Tyr  
 485 490 495  
 Met Gln Lys Glu Thr Tyr Gly Lys Ser Tyr Arg Tyr Thr Ile Thr Thr  
 500 505 510  
 Gly Gly His Glu Asp Ser Trp Asp Leu Asn Pro Pro Ser Asp Leu Ala  
 515 520 525  
 Phe Val Lys Gln Thr Phe Gly Leu Leu Val Arg Tyr Ser Lys Leu Leu  
 530 535 540  
 Gly Val Asp Gln Lys Arg Arg Lys Lys Trp Asp Asp Ile Leu Ser His  
 545 550 555 560  
 Leu Pro Glu Tyr Lys Val Ile Met Pro Thr Lys Thr Pro Asn Gln Gly  
 565 570 575  
 Leu Pro Val Tyr Ala Lys Asn Glu Ala Gly Trp Asp Leu Pro Ser His  
 580 585 590  
 Ala Ile Gln Leu His Ala Ala Tyr Pro Cys Glu Ile Leu Asn Leu His  
 595 600 605  
 Ser Asp Ser Thr Ala Leu Gln Ile Ala Arg Asn Thr Leu Tyr Tyr Tyr  
 610 615 620  
 Glu Val Ser Gln Lys Gly Phe Thr Asn Thr Met Asn Glu Leu Gly Leu  
 625 630 635 640  
 Ser Ala Phe Val Met Gly Pro Val Ser Asp Leu Leu Pro Ile Ser Tyr  
 645 650 655  
 Trp Lys Ile

&lt;210&gt; 6606

&lt;211&gt; 160

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6606

Leu Tyr Lys Met Lys Lys Lys Ala Asn Arg Leu Asp Ala Ile Lys Met  
 1 5 10 15  
 Ile Ile Ser Ser Lys Glu Val Gly Ser Gln Glu Glu Leu Leu Gln Glu

Ile	Asn	Lys	Met	Ile	Asp	Arg	Phe	Leu	Ser	Gln	Thr	Ser	Phe	Asn	Ser
1				5					10					15	
Gln	Glu	Asp	Phe	Val	Lys	Asn	Leu	Lys	Ile	His	Val	Pro	Asp	Asn	Phe
			20					25					30		
Asn	Phe	Gly	Tyr	Asp	Ile	Val	Asp	Ala	Trp	Ala	Ala	Glu	Gln	Pro	Asp
		35					40					45			
Lys	Pro	Ala	Leu	Leu	Trp	Thr	Asn	Asp	Lys	Gly	Glu	His	His	Gln	Phe
	50					55					60				
Ser	Phe	Ala	Asp	Met	Lys	Gln	Tyr	Thr	Asp	Arg	Thr	Ala	Ser	Tyr	Phe
65					70					75				80	
Gln	Ser	Leu	Gly	Ile	Gly	His	Gly	Asp	Met	Val	Met	Leu	Ile	Leu	Lys
				85				90						95	
Arg	Arg	Tyr	Glu	Phe	Trp	Phe	Ser	Ile	Ile	Ala	Leu	His	Lys	Leu	Gly
			100					105					110		
Ala	Val	Val	Ile	Pro	Ala	Thr	His	Leu	Leu	Thr	Lys	Lys	Asp	Ile	Val
		115					120					125			
Tyr	Arg	Cys	Asn	Ala	Ala	Asp	Ile	Lys	Met	Ile	Val	Ala	Ala	Gly	Glu
	130					135					140				
Glu	Val	Val	Thr	Lys	His	Ile	Ile	Asp	Ala	Met	Pro	Asp	Ser	Pro	Thr
145					150					155				160	
Val	Lys	His	Leu	Val	Ser	Val	Gly	Pro	Glu	Ile	Pro	Glu	Gly	Phe	Asp
				165				170						175	
Asp	Phe	His	Gln	Gly	Ile	Glu	His	Ala	Ala	Pro	Phe	Val	Lys	Pro	Glu
			180					185					190		
His	Pro	Asn	Thr	Asn	Asp	Asp	Ile	Ser	Leu	Met	Tyr	Phe	Thr	Ser	Gly
		195				200						205			
Thr	Thr	Gly	Glu	Pro	Lys	Met	Val	Ala	His	Asp	Phe	Thr	Tyr	Pro	Leu
		210				215					220				
Gly	His	Ile	Val	Thr	Gly	Ser	Phe	Trp	His	Asn	Leu	Lys	Glu	Asn	Ser
225					230					235				240	
Leu	His	Leu	Thr	Ile	Ala	Asp	Thr	Gly	Trp	Gly	Lys	Ala	Val	Trp	Gly
				245				250						255	
Lys	Leu	Tyr	Gly	Gln	Trp	Ile	Ala	Gly	Ala	Asn	Val	Phe	Val	Tyr	Asp
			260					265					270		
His	Glu	Lys	Phe	Thr	Pro	Ala	Asp	Ile	Leu	Glu	Lys	Ile	Gln	Asn	Tyr

[illegible]

275 280 285  
 His Val Thr Ser Leu Cys Ala Pro Pro Thr Ile Phe Arg Phe Leu Ile  
 290 295 300  
 His Glu Asp Leu Thr Lys Tyr Asp Leu Ser Ser Leu Glu Tyr Cys Thr  
 305 310 315 320  
 Ile Ala Gly Glu Ala Leu Asn Pro Ala Val Phe Asp Thr Phe Lys Lys  
 325 330 335  
 Leu Thr Gly Ile Lys Leu Met Glu Gly Phe Gly Gln Thr Glu Thr Thr  
 340 345 350  
 Leu Thr Val Ala Thr Phe Pro Trp Met Glu Pro Lys Pro Gly Ser Met  
 355 360 365  
 Gly Val Pro Asn Pro Gln Tyr Asn Val Asp Leu Ile Asp Tyr Glu Gly  
 370 375 380  
 Arg Ser Val Glu Ala Gly Glu Gln Gly Gln Ile Val Ile Arg Thr Asp  
 385 390 395 400  
 Lys Gly Lys Pro Leu Gly Leu Phe Lys Glu Tyr Tyr Arg Asp Ala Ser  
 405 410 415  
 Arg Thr His Glu Ala Trp His Asp Gly Ile Tyr Tyr Thr Gly Asp Val  
 420 425 430  
 Ala Trp Lys Asp Glu Asp Gly Tyr Leu Trp Phe Val Gly Arg Ala Asp  
 435 440 445  
 Asp Val Ile Lys Ser Ser Gly Tyr Arg Ile Gly Pro Phe Glu Val Glu  
 450 455 460  
 Ser Ala Leu Met Thr His Pro Ala Val Val Glu Cys Ala Ile Thr Gly  
 465 470 475 480  
 Val Pro Asp Glu Ile Arg Gly Gln Val Val Lys Ala Thr Ile Val Leu  
 485 490 495  
 Ala Lys Glu Tyr Arg Glu Arg Lys Gly Glu Asp Leu Val Lys Glu Leu  
 500 505 510  
 Gln Asn His Val Lys Lys Val Thr Ala Pro Tyr Lys Tyr Pro Arg Val  
 515 520 525  
 Ile Glu Phe Val Asp Glu Leu Pro Lys Thr Ile Ser Gly Lys Ile Arg  
 530 535 540  
 Arg Val Glu Ile Arg Lys Asn Asp Glu Lys  
 545 550

&lt;210&gt; 6608

&lt;211&gt; 334

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6608

Ile Met Glu Phe Leu Thr Asn Glu Lys Leu Thr Ile Val Gly Ala Ala  
 1 5 10 15  
 Gly Met Ile Gly Ser Asn Met Ala Gln Thr Ala Leu Met Met Lys Leu  
 20 25 30  
 Thr Pro Asn Ile Cys Leu Tyr Asp Pro Tyr Ala Pro Ala Leu Glu Gly  
 35 40 45  
 Val Ala Glu Glu Leu Tyr His Cys Ala Phe Glu Gly Val Asn Leu Thr  
 50 55 60  
 Tyr Thr Ser Asp Ile Lys Glu Ala Leu Ser Gly Ala Lys Tyr Ile Val  
 65 70 75 80  
 Ser Ser Gly Gly Ala Ala Arg Lys Ala Gly Met Thr Arg Glu Asp Leu  
 85 90 95  
 Leu Lys Gly Asn Ala Glu Ile Ala Ala Gln Phe Gly Lys Asp Ile Arg  
 100 105 110  
 Gln Tyr Cys Pro Asp Val Lys His Val Val Val Val Phe Asn Pro Ala  
 115 120 125  
 Asp Ile Thr Gly Leu Ile Val Leu Leu Tyr Ala Gly Leu Lys Pro Ser

130 135 140  
 Gln Val Ser Thr Leu Ala Ala Leu Asp Ser Thr Arg Leu Gln Asn Glu  
 145 150 155 160  
 Leu Val Lys Tyr Leu His Ile Pro Ala Ser Glu Ile Val Asn Cys Arg  
 165 170 175  
 Thr Tyr Gly Gly His Gly Glu Gln Met Ala Val Phe Ala Ser Thr Thr  
 180 185 190  
 Lys Val Gln Gly Glu Ala Leu Thr Lys Ile Ile Asp Thr Pro Arg Met  
 195 200 205  
 Pro Met Gln Asp Trp Glu Asp Leu Lys Val Arg Val Ile Gln Gly Gly  
 210 215 220  
 Lys His Ile Ile Asp Leu Arg Gly Arg Ser Ser Phe Gln Ser Pro Ala  
 225 230 235 240  
 Tyr Leu Ser Ile Glu Met Ile Ala Ala Ala Met Gly Gly Gln Pro Phe  
 245 250 255  
 Arg Trp Pro Ala Gly Thr Tyr Val Ser Asp Lys Lys Phe Asp His Ile  
 260 265 270  
 Leu Met Ala Met Glu Thr Ser Ile Thr Lys Glu Gly Val Ser Tyr Lys  
 275 280 285  
 Glu Ile Gln Gly Thr Pro Glu Glu Gln Lys Glu Met Glu Glu Ser Tyr  
 290 295 300  
 Ala His Leu Cys Lys Leu Arg Asp Glu Val Ile Ala Met Gly Ile Leu  
 305 310 315 320  
 Pro Glu Ile Asn Lys Trp His Glu Leu Asn Lys His Ile Asn  
 325 330

<210> 6609

<211> 760

<212> PRT

<213> B.fragilis

<400> 6609

Met Asn Asn Ser Lys Ile Ile Asn Val Arg Leu Met Lys Lys Val Leu  
 1 5 10 15  
 Val Leu Val Leu Ser Phe Leu Ser Val Thr Ala Phe Ala Gln Asn Ile  
 20 25 30  
 Thr Val Lys Gly Ile Val Lys Asp Gly Thr Gly Glu Pro Ile Ile Gly  
 35 40 45  
 Gly Ser Val Leu Val Lys Gly Ser Ser Ile Gly Thr Val Thr Asp Val  
 50 55 60  
 Asp Gly Asn Tyr Thr Leu Ser Asn Val Pro Ala Asp Gly Val Leu Glu  
 65 70 75 80  
 Phe Ser Tyr Ile Gly Met Lys Lys Gln Asp Val Lys Val Ser Gly Lys  
 85 90 95  
 Thr Val Ile Asn Val Val Leu Gln Glu Asp Thr Gln Ile Leu Asp Glu  
 100 105 110  
 Val Val Val Thr Ala Leu Gly Leu Lys Arg Glu Gln Lys Ala Leu Gly  
 115 120 125  
 Tyr Ala Val Thr Glu Val Lys Gly Asp Asp Leu Lys Ala Ala Asn Thr  
 130 135 140  
 Ile Ser Pro Val Ala Ala Leu Gln Gly Lys Val Ala Gly Val Glu Ile  
 145 150 155 160  
 Arg Gln Ser Asp Gly Gly Met Phe Gly Ala Thr Lys Ile Gln Ile Arg  
 165 170 175  
 Gly Ala Ser Thr Leu Lys Gly Asn Asn Gln Pro Ile Tyr Val Ile Asp  
 180 185 190  
 Gly Val Ile Leu Asp Asn Ser Thr Ser Gly Asn Thr Thr Met Asp Trp  
 195 200 205  
 Asp Ala Gly Asn Asn Asn Ala Asn Asp Tyr Gly Asn Glu Leu Lys Asn

210 215 220  
 Leu Asn Pro Asp Asp Phe Glu Thr Val Ser Val Leu Lys Gly Ala Ala  
 225 230 235 240  
 Ala Thr Ala Leu Tyr Gly Ser Arg Gly Leu Asn Gly Ala Val Val Ile  
 245 250 255  
 Thr Thr Lys Ser Gly Lys Gly Phe Lys Gly Phe Gly Val Ser Val Ser  
 260 265 270  
 Gln Thr Phe Gly Ile Asp His Ala Tyr Arg Thr Pro Asp Ile Gln Thr  
 275 280 285  
 Glu Tyr Gly Val Gly Leu Met Pro Gly Trp Lys Asp Thr Asp Asn Asn  
 290 295 300  
 Gly Ser Val Trp Asp Pro Phe Gln Phe Lys Leu Asp Asp Lys Gly Asp  
 305 310 315 320  
 Arg Thr Leu Ile Gly Ala Gly Ser Tyr Gly Trp Gly Pro Lys Tyr Asp  
 325 330 335  
 Gly Gln Pro Ile Arg Asn Tyr Asp Gly Thr Trp Thr Asn Tyr Ser Pro  
 340 345 350  
 His Lys Asn Asn Met Leu Asp Leu Tyr Gln Leu Gly Leu Asn Ser Asn  
 355 360 365  
 Thr Asn Val Ala Ile Arg Gly Gly Asn Asp Lys Thr Ser Tyr Tyr Thr  
 370 375 380  
 Ser Leu Ser Tyr Lys Lys Ala Arg Ser Thr Ser Glu Lys Asn Thr Phe  
 385 390 395 400  
 Glu Arg Tyr Ser Phe Leu Leu Lys Gly Ser His Lys Ile Ser Asp Arg  
 405 410 415  
 Val Glu Val Ser Ala Ala Met Ser Phe Thr Asn Ser Asn Pro Lys Asn  
 420 425 430  
 Ser Pro Arg Thr Val Gly Glu Arg Phe Val Asn Pro Asn Gly Thr Ile  
 435 440 445  
 Met Thr Pro Met Leu Asp Val Asn Tyr Phe Arg Asp Lys Tyr Leu Gly  
 450 455 460  
 Glu His Gly Gly Leu Ala Ser Thr Ser Tyr Gly Asp Lys Tyr Gly Ser  
 465 470 475 480  
 Val Pro Gly Arg Asp Leu Phe Phe Met Ile Asp Lys Tyr Asp Tyr Ser  
 485 490 495  
 Gln Lys Glu Thr Val Val Arg Pro Gln Met Glu Val Asn Val Gln Ile  
 500 505 510  
 Leu Asp Trp Leu Arg Phe Lys Ala Asp Ala Asn Met Asn Tyr Tyr Tyr  
 515 520 525  
 Thr Lys Phe Glu Glu Lys Gln Leu Gly Ser Gly Tyr Ala Asn Glu Gly  
 530 535 540  
 Gly Lys Tyr Thr Met Gly Gln Thr Thr Lys Glu Gln Ala Thr Phe Gly  
 545 550 555 560  
 Gly Thr Phe Thr Val Asn Lys Gln Ile Gln Asp Phe Ser Val Gly Gly  
 565 570 575  
 Phe Ala Arg Tyr Glu Tyr Tyr Thr Ser Arg Ser Glu Ala Tyr Lys Val  
 580 585 590  
 Tyr Thr Asp Gly Gly Met Val Val Pro Gly Gln Trp Phe Val Asp Asn  
 595 600 605  
 Ser Lys Asn Pro Lys Lys Ser Glu Ala Ser Ile Ser Asn Thr Lys Arg  
 610 615 620  
 Met Met Ser Ala Val Phe Ala Leu Asn Leu Gly Trp Lys Asn Gln Val  
 625 630 635 640  
 Tyr Leu Asp Val Thr Gly Arg Asn Asp Trp Ser Ser Ser Leu Val Tyr  
 645 650 655  
 Gln Asn Gly Met Gly Thr Tyr Ser Tyr Phe Tyr Pro Ser Val Ser Gly  
 660 665 670  
 Ser Trp Leu Leu Asn Glu Thr Phe Asp Leu Pro His Trp Ile Thr Phe  
 675 680 685

Ala Lys Val Arg Gly Ser Trp Ala Gln Val Gly Asn Asp Thr Asp Pro  
 690 695 700  
 Tyr Tyr Val Asn Ser Val Tyr Gly Phe Glu Thr Lys Glu Met Tyr Asp  
 705 710 715 720  
 Gly Asn Ile Tyr Val Asn Thr Leu Asp Lys Thr Met Lys Ser Leu Lys  
 725 730 735  
 Leu Lys Pro Glu Arg Lys Asn Ala Trp Glu Val Gly Leu Asp Leu Arg  
 740 745 750  
 Leu Phe Asp Ser Ser Leu Thr Leu  
 755 760

<210> 6610  
 <211> 114  
 <212> PRT  
 <213> B.fragilis

<400> 6610

Ile Cys Ile Ser Val Pro Gln Leu Ile Ala Cys Cys Gly Leu Asp Cys  
 1 5 10 15  
 Glu Asn Cys Asp Ala Arg Ile Ala Thr Val Arg Asp Asp Asn Glu Leu  
 20 25 30  
 Arg Glu Lys Thr Ala Gln Lys Trp Ser Ile Met Asn Asn Ala Pro Glu  
 35 40 45  
 Ile Thr Pro Ala Thr Ile Asn Cys Met Gly Cys Arg Thr Asp Gly Ala  
 50 55 60  
 Lys Phe Ala Tyr Cys Asn Asp Tyr Cys Pro Ile Arg Lys Cys Val Asn  
 65 70 75 80  
 Glu Lys Gly Tyr Asn Thr Cys Gly Asp Cys Lys Glu Leu Asp Asp Cys  
 85 90 95  
 Gln Ile Val Gly Ala Ile Phe Gln His Ala Pro Asp Ala Lys Glu Asn  
 100 105 110  
 Leu Leu

<210> 6611  
 <211> 321  
 <212> PRT  
 <213> B.fragilis

<400> 6611

Ile Val Thr Ser Leu Lys Leu Glu Asp Arg Leu Met Lys Asp Pro Phe  
 1 5 10 15  
 Lys Leu Asn Val Lys Ser Ile Met Ala Leu Tyr Glu Leu Phe Pro Thr  
 20 25 30  
 Glu Glu Ala Cys Ile Lys His Leu Glu Ala Ile Asn Trp His Asp Lys  
 35 40 45  
 Pro Val Ser Pro Phe Asp Lys Thr Ser Arg Val Tyr Lys Leu Lys Ser  
 50 55 60  
 Gly Lys Tyr Arg Cys Lys Asn Thr Gly Lys Asn Phe Thr Val Arg Thr  
 65 70 75 80  
 Gly Thr Met Phe Glu Lys Thr Lys Ile Ser Leu Arg Lys Trp Phe Ile  
 85 90 95  
 Ala Ile Trp Leu Val Thr Asn His Lys Ile Gly Leu Ser Ser Tyr Gln  
 100 105 110  
 Leu Ala Asn Asp Ile Glu Val Thr Gln Lys Thr Ala Trp Tyr Met Leu  
 115 120 125  
 His Lys Ile Arg His Ala Met Arg Leu Ala Asn Glu Asn Ile Leu Glu  
 130 135 140  
 Glu Ala Val Glu Ile Asp Glu Thr Val Val Gly Gly Lys Asn Gly Asn

[illegible]

<400> 6612

```
<210> 6613
<211> 138
<212> PRT
<213> B.fragilis
```

<400> 6613

Pro	Thr	Arg	Ser	His	Thr	Met	Lys	Leu	Arg	Lys	Pro	Phe	Arg	Ile	Leu
1				5					10					15	
Arg	Asn	Leu	Ile	Leu	Phe	Phe	Phe	Ile	Ser	Ser	Ile	Gly	Ala	Val	Ile
			20					25					30		
Phe	Tyr	Arg	Phe	Val	Pro	Val	Tyr	Val	Thr	Pro	Leu	Met	Ile	Ile	Arg
		35					40					45			
Ser	Val	Gln	Gln	Leu	Val	Ser	Gly	Glu	Lys	Val	Val	Cys	Lys	His	Thr
	50					55					60				
Trp	Val	Pro	Phe	Asp	Lys	Ile	Ser	Pro	Ser	Leu	Pro	Met	Ala	Val	Ile
65				70						75				80	
Ala	Ser	Glu	Asp	Asn	Arg	Phe	Ala	Ser	His	Asn	Gly	Phe	Asp	Met	Ile
			85						90					95	
Glu	Ile	Lys	Lys	Ala	Met	Lys	Glu	Asn	Glu	Thr	Arg	Lys	Lys	Glu	Thr
			100					105					110		

Gly Cys Gln Tyr His Gln Pro Ala Asp Ser Glu Lys Arg Leu Ser Leu  
 115 120 125  
 Ala Thr Ile Phe Val Asp Thr Lys Arg Ile  
 130 135

<210> 6614  
 <211> 333  
 <212> PRT  
 <213> B.fragilis

<400> 6614  
 Glu Ser Pro Ser Thr Pro Cys Ser Cys Leu Ser Arg Arg Ser Thr Arg  
 1 5 10 15  
 Asn Met Tyr Cys Lys Pro His Arg Pro Gly Asn Thr Pro Gln Val Pro  
 20 25 30  
 Asp Asn Lys Gly Lys Cys Thr Arg Leu Val Asp Tyr Leu Ser Lys Glu  
 35 40 45  
 Ser Gln Val Glu Arg Pro Tyr Tyr Asp Asn Phe Phe Ser Gln Gln Lys  
 50 55 60  
 Asp Tyr Val Ile Pro Leu Thr Val Lys Asn His Ile Asp Asn Asn His  
 65 70 75 80  
 Arg Thr Leu Lys Ser Asn Asp Asp Lys Phe Tyr Met Leu Ser Ile Asn  
 85 90 95  
 Pro Ser Gly Asp Glu Gln Arg His Leu Ile Glu Arg Val Thr Gly Arg  
 100 105 110  
 Lys Val Gly Glu Phe Ser Glu Leu Thr Pro Gly Glu Gln Glu Ser Val  
 115 120 125  
 Leu Ala Gln Met Lys Lys Phe Thr Arg Glu Cys Met Asp Glu Tyr Ala  
 130 135 140  
 Arg Asn Phe Tyr Arg Glu Lys Ile Lys Ser Gly Asp Asp Leu Val Trp  
 145 150 155 160  
 Tyr Gly Arg Val Glu Thr Glu Arg His Tyr Lys Asn Asp Asp Pro Glu  
 165 170 175  
 Val Lys Ala Gly Arg Ala Lys Ala Gly Asp Lys Lys Pro Gly Leu Gln  
 180 185 190  
 Leu His Val His Val Ile Val Ser Arg Met Asp Arg Thr Gln Thr Val  
 195 200 205  
 Ser Leu Ser Pro Leu Ser Lys Ser Arg Gly Asn Arg Gln Val Leu Glu  
 210 215 220  
 Gly Arg Glu Val Val Val Gly Phe Asp Arg Ser Gln Trp Ser Ser Arg  
 225 230 235 240  
 Cys Ala Ser Arg Phe Asn Gln Leu Tyr Asp Tyr Phe Pro Asn Tyr Tyr  
 245 250 255  
 Ser Arg Asp Glu Ser Leu Arg Lys Tyr Ser Glu Asn Trp Gln Ala Lys  
 260 265 270  
 Asn Glu Leu Lys Asn Glu Ala Val Ser Lys Leu Lys Gln Glu Val Leu  
 275 280 285  
 Lys Gly Glu Leu Lys Glu Glu Arg Arg Leu Tyr Ala Asn Thr Phe Arg  
 290 295 300  
 Ile Tyr Arg Phe Val Val Asn Pro Arg Lys Ala Ile Ile Gln Glu Leu  
 305 310 315 320  
 Lys Arg Leu Gly Thr Asp Leu Leu Ser Gly Arg Asp Leu  
 325 330

<210> 6615  
 <211> 322  
 <212> PRT  
 <213> B.fragilis



&lt;400&gt; 6615

Thr Ala Thr Pro Tyr Lys Asn Lys Asp Trp Gln Trp Asp Val Ala Met  
 1 5 10 15  
 Thr Tyr Thr Lys Asn Lys Asn Thr Ile Ile Ser Leu His Glu Asn Val  
 20 25 30  
 Ala Asp Tyr Ile Ala Leu Ser Gly Tyr Ala Asn Asp Tyr Asp Tyr His  
 35 40 45  
 Ile Gly Ser Val Ala Lys Val Gly Gly Asp Tyr Gly Leu Leu Met Ser  
 50 55 60  
 Asp Ile Leu Pro Ala Lys Asn Glu Lys Gly Glu Thr Leu Leu Glu Trp  
 65 70 75 80  
 Asp Asp Ser Trp Arg Gly Ala Tyr Glu Ala Arg Ser Gly Lys Val Gln  
 85 90 95  
 Glu Val Gly Lys Met Thr Pro Asp Phe Leu Gly Ser Leu Ser Thr Thr  
 100 105 110  
 Leu Ser Trp Lys Asn Leu Ser Leu His Ile Ala Thr Asp Met Arg Phe  
 115 120 125  
 Gly Gly Leu Val Ala Ser Tyr Ser Asn Leu Tyr Gly Thr Gln Ala Gly  
 130 135 140  
 Trp Ile Lys Ser Ser Leu Lys Trp Arg Asp Pro Glu His Gly Gly Leu  
 145 150 155 160  
 Ser Trp Thr Ser Gln Tyr Gly Asp Ser Lys Gly Ile Ser Tyr Gly Asp  
 165 170 175  
 Gly Val Ile Pro Asp Gly Val Phe Lys Asn Gly Thr Phe Ala Thr Leu  
 180 185 190  
 Val Asp Gly Thr Lys Met Asp Val Ser Gly Met Ser Tyr Lys Gln Leu  
 195 200 205  
 Val Ala Glu Gly Lys Leu Glu Pro Thr His Ala Gly Thr Tyr His Val  
 210 215 220  
 Asn Arg Ala Ala Trp Gly Gln Asn Thr Ile Phe Asp Thr Trp Val His  
 225 230 235 240  
 Glu Leu Asn Tyr Ile Ala Leu Arg Glu Ile Thr Leu Ser Tyr Arg Phe  
 245 250 255  
 Pro Lys Ser Val Ala Ser Lys Phe Gly Ala Gln Gly Leu Gly Leu Ser  
 260 265 270  
 Phe Ser Ala Arg Asn Leu Gly Tyr Leu Tyr Asn Ser Leu Pro Asn His  
 275 280 285  
 Leu Asn Pro Glu Ser Val Arg Gly Asn Thr Ala Ser Glu Phe Arg Ile  
 290 295 300  
 Arg Gly Tyr Glu Pro Tyr Thr Ala Asn Tyr Met Met Thr Ile Asn Val  
 305 310 315 320  
 Asp Phe

&lt;210&gt; 6616

&lt;211&gt; 288

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6616

Glu Leu Tyr Pro Asp Ile Met Asn Arg Ile Glu Lys Asn Lys Thr Gln  
 1 5 10 15  
 Thr Asp Gln Ala Trp Asn Lys Leu His Asn Arg Leu Glu Thr Asp Gly  
 20 25 30  
 Leu Leu Pro Thr Val Thr Glu Arg Phe Ala Thr Arg Pro Thr Val  
 35 40 45  
 Trp Ile Gly Ile Ala Ala Ile Ala Ala Ile Ile Ser Leu Cys Val Tyr  
 50 55 60  
 Leu Pro Thr Val Leu Arg Thr Asp Arg His Leu Ser Gly Gly Glu Leu

65					70					75				80	
Leu	Val	Lys	Ala	Asn	Lys	Glu	Glu	Ser	Ile	Leu	Val	Thr	Thr	Leu	Glu
				85					90					95	
Asp	Gly	Ser	Val	Val	Tyr	Leu	Ser	Glu	Gln	Thr	Ser	Leu	Glu	Tyr	Pro
			100					105					110		
Lys	His	Phe	Ser	Lys	Lys	Arg	Arg	Glu	Val	Ser	Leu	Lys	Gly	Asn	Ala
		115				120						125			
Leu	Phe	Asp	Ile	Ala	Gly	Asn	Arg	Ala	Arg	Pro	Phe	Phe	Ile	Glu	Thr
	130				135						140				
Gly	Lys	Val	Gln	Ile	Glu	Val	Ile	Gly	Thr	Ala	Phe	His	Val	Arg	Asn
145				150					155					160	
Ser	Gly	Asn	Ser	Pro	Phe	Glu	Leu	Ala	Val	Gln	Arg	Gly	Glu	Val	Lys
			165					170						175	
Val	Thr	Gln	Lys	Gln	Asn	Gly	Gln	Glu	Ile	His	Val	Lys	Ala	Gly	Glu
		180						185					190		
Thr	Ala	Thr	Leu	Leu	Gly	Asp	Glu	Trp	Gln	Leu	Thr	Val	Thr	Glu	Asn
		195					200					205			
Ser	Glu	Gln	Phe	Thr	Arg	Tyr	Met	Gln	Asn	Met	Arg	Phe	Lys	Asp	Glu
	210				215						220				
Gln	Leu	Asp	His	Ile	Leu	His	Ala	Ile	Asn	Leu	Arg	Gln	Thr	Glu	Ile
225				230					235					240	
His	Leu	Gln	Ser	Ser	Pro	Glu	Leu	Gly	Lys	His	Val	Leu	Thr	Val	Ser
			245					250						255	
Phe	Ser	Glu	Asp	Ser	Pro	Glu	Lys	Met	Ala	Glu	Leu	Ile	Gly	Leu	Ala
		260					265					270			
Leu	Asn	Leu	Lys	Cys	Thr	Arg	Asn	Gln	Asn	Ile	Ile	Thr	Leu	Ser	Glu
		275					280					285			

<210> 6617  
 <211> 148  
 <212> PRT  
 <213> B.fragilis

<400> 6617  
 Ala Leu Phe Pro Leu Ala Pro Ser Leu Pro Leu Ala Pro Ser Phe Pro  
 1 5 10 15  
 Ala Ala Pro Ser Leu Pro Leu Ile Pro Ser Phe Pro Leu Ala Pro Ser  
 20 25 30  
 Phe Pro Leu Ala Pro Ser Leu Pro Leu Met Pro Ser Leu Pro Leu Ala  
 35 40 45  
 Pro Ser Leu Pro Tyr Ala Arg Ile Pro Val Ser Phe Pro Leu Ile Tyr  
 50 55 60  
 Gln Phe Pro Leu Val Pro Ile Ile Thr Ser Gly Asp Leu Pro Ser Leu  
 65 70 75 80  
 Pro Ile Ala Ala Phe Pro Val Ser Phe Pro Leu Ile Thr Gln Phe Pro  
 85 90 95  
 Phe Ser Pro Ile Val Thr Val Gly Val Val Pro Ala Thr Pro Ser Ser  
 100 105 110  
 Pro Leu Glu Gly Phe Pro Val Ser Thr Pro Ser Ile Asn Gln Leu Pro  
 115 120 125  
 Leu Ser Pro Ile Val Thr Thr Gly Gly Thr Ala Ser Ser Pro Phe Cys  
 130 135 140  
 Pro Ser Leu Pro  
 145

<210> 6618  
 <211> 96  
 <212> PRT  
 <213> B.fragilis

&lt;400&gt; 6618

Tyr Gly Pro Phe Glu Gly Leu Leu Arg Pro Gly Glu His Arg Ala Glu  
 1 5 10 15  
 Trp Phe Pro Val Phe Gly Gln Leu Leu Phe Asp Ala Thr Val Val Asn  
 20 25 30  
 Ser Thr Glu Tyr Ala His Val Lys Gly Tyr Gly Val Arg His Asn Pro  
 35 40 45  
 Cys Cys Ser Gln Val Arg Leu Ile Ile Phe His Glu Tyr Met Val Tyr  
 50 55 60  
 Arg Ala Asn Val Asn Val Pro Val Ile Pro Glu Leu Phe Glu Thr Ala  
 65 70 75 80  
 Lys Arg Ser Ile Ile Val Leu Gly Gly Ala Gly Val Val Gln Leu Pro  
 85 90 95

&lt;210&gt; 6619

&lt;211&gt; 466

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6619

Gly Leu Gln Pro Glu Glu Ser Arg Ile Phe Ala Thr His Phe Leu Leu  
 1 5 10 15  
 Asn Asn Ile Met Gln Gly Ile Lys Asn Leu Thr Gln Gly Pro Ile Asn  
 20 25 30  
 Lys Gln Leu Phe Asn Leu Ala Met Pro Ile Met Ala Thr Ser Phe Ile  
 35 40 45  
 Gln Met Ala Tyr Ser Leu Thr Asp Met Ala Trp Val Gly Arg Leu Gly  
 50 55 60  
 Ser Glu Ala Val Ala Ala Val Gly Ser Val Gly Ile Leu Thr Trp Met  
 65 70 75 80  
 Ser Gly Ser Ile Ser Leu Leu Asn Lys Val Gly Ser Glu Val Ser Val  
 85 90 95  
 Gly Gln Ser Ile Gly Ala Gln Asn His Glu Asp Ala Arg Asn Phe Ala  
 100 105 110  
 Ser His Asn Ile Thr Ile Ala Leu Ile Ile Ser Leu Cys Trp Gly Gly  
 115 120 125  
 Leu Leu Phe Leu Leu Ala Arg Pro Ile Ile Gly Ile Tyr Glu Leu Glu  
 130 135 140  
 Ala His Ile Thr Glu Asn Ala Ile Ala Tyr Leu Arg Ile Ile Ser Thr  
 145 150 155 160  
 Gly Leu Pro Phe Ile Phe Leu Ser Ala Ala Phe Thr Gly Ile Tyr Asn  
 165 170 175  
 Ala Ala Gly Arg Ser Lys Ile Pro Phe Tyr Ile Ser Gly Thr Gly Leu  
 180 185 190  
 Val Leu Asn Ile Leu Leu Asp Pro Leu Phe Ile Phe Gly Phe Gly Leu  
 195 200 205  
 Gly Thr Asn Gly Ala Ala Tyr Ala Thr Trp Ile Ser Gln Ala Ala Val  
 210 215 220  
 Phe Gly Ile Phe Ile Tyr Gln Leu Arg Cys Arg Asp Ala Leu Leu Gly  
 225 230 235 240  
 Arg Phe Tyr Phe Phe Thr Arg Leu Lys Lys Lys Tyr Thr His Arg Ile  
 245 250 255  
 Leu Lys Leu Gly Leu Pro Val Ala Thr Leu Asn Thr Leu Phe Ala Phe  
 260 265 270  
 Val Asn Met Phe Leu Cys Arg Thr Ala Ser Glu Gln Gly Gly His Ile  
 275 280 285  
 Gly Leu Met Thr Phe Thr Thr Gly Gly Gln Ile Glu Ala Ile Thr Trp  
 290 295 300

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300

Asn Thr Ser Gln Gly Phe Ser Thr Ala Leu Ser Ala Phe Ile Ala Gln  
 305 310 315 320  
 Asn Tyr Ala Ala Gly Arg Thr Asp Arg Val Ile Lys Ser Trp His Met  
 325 330 335  
 Thr Leu Leu Met Thr Ser Ile Phe Gly Thr Leu Cys Thr Leu Leu Phe  
 340 345 350  
 Val Phe Phe Gly Asn Glu Ile Phe Ala Leu Phe Val Pro Glu Gln Ala  
 355 360 365  
 Ala Tyr Glu Ala Gly Gly Val Phe Leu Arg Ile Asp Gly Tyr Ser Gln  
 370 375 380  
 Leu Phe Met Met Leu Glu Ile Thr Thr Gln Gly Val Phe Tyr Gly Ile  
 385 390 395 400  
 Gly Arg Thr Ile Pro Pro Ala Ile Ile Ser Ile Thr Cys Asn Tyr Met  
 405 410 415  
 Arg Ile Pro Leu Ala Ile Leu Phe Val Arg Met Gly Met Gly Val Glu  
 420 425 430  
 Gly Ile Trp Trp Ala Val Cys Val Thr Thr Val Ala Lys Gly Leu Ile  
 435 440 445  
 Leu Ala Gly Trp Phe Ala Leu Ile Lys Arg Lys Val Leu Ser Arg Pro  
 450 455 460  
 Ile Leu  
 465

<210> 6620  
 <211> 78  
 <212> PRT  
 <213> B.fragilis

<400> 6620  
 Leu Pro Ser Thr Thr His Asp Ile Asp Thr His Met Ile Thr Ala Thr  
 1 5 10 15  
 Met Glu Gly Asn Ala Ala Ala Gln Asp Phe Leu Ser His Leu Pro Leu  
 20 25 30  
 Lys Ala Thr Leu Pro Phe Ile Pro Arg Gly Val Ala Leu Gln Phe Ser  
 35 40 45  
 Ala Phe Leu Thr Pro Thr His Leu Ser Ser Glu Lys Phe Val Ala Val  
 50 55 60  
 Val Leu Met Thr Asn Ser Phe Val Thr Val Cys Glu Trp Gln  
 65 70 75

<210> 6621  
 <211> 401  
 <212> PRT  
 <213> B.fragilis

<400> 6621  
 Ser Met Ala Thr Val Lys Ala Lys Phe Arg Pro Ser Thr Val Lys Asp  
 1 5 10 15  
 Arg Pro Gly Thr Ile Val Tyr Val Val Ile His Arg Arg Thr Val Arg  
 20 25 30  
 Gln Ile Thr Thr Gly Tyr Lys Val Phe Pro His Glu Trp Asp Glu Glu  
 35 40 45  
 Arg Ser Lys Pro Val Leu Ala Asp Asn Val Arg Arg Thr Thr Val Met  
 50 55 60  
 Gln Ser Ile Thr Arg Lys Leu Gln Ser Asp Met Lys Arg Leu Tyr Lys  
 65 70 75 80  
 Ile Ile Glu Arg Phe Asp Lys Gln Cys Arg Ser Tyr Ser Ser Asp Asp  
 85 90 95  
 Val Val Ala Glu Phe Arg His Ser Glu Glu Gly Asp Ser Phe Phe Asn

[illegible]

<400> 6622

Arg	Thr	Leu	Thr	Pro	Asp	Ile	Ser	Pro	Asn	Met	Leu	Asn	Asp	Val	Phe
1				5					10					15	
Ile	Leu	Thr	Gln	Ile	Lys	Glu	Gly	Asn	Ile	Lys	Ala	Phe	Glu	Thr	Leu
			20					25					30		
Phe	Arg	Gln	Tyr	Tyr	Thr	Pro	Leu	Arg	Leu	Tyr	Ala	Ala	Ser	Ile	Thr
			35				40					45			
Gly	Glu	Pro	Asp	Val	Ala	Glu	Glu	Ile	Val	Glu	Glu	Leu	Phe	Tyr	Val
			50			55					60				
Phe	Trp	Lys	Asp	Arg	Glu	Lys	Leu	Glu	Ile	Phe	His	Ser	Val	Lys	Asn
65					70					75					80
Tyr	Leu	Tyr	Arg	Ser	Val	Arg	Asn	Arg	Ser	Ile	Gln	Tyr	Cys	Glu	His
				85					90					95	
Gln	Asp	Val	Arg	Arg	Arg	Tyr	Gln	Asp	Ala	Ile	Leu	Ser	Val	Pro	Val

100	105	110
Asn Ile Ala Ser Pro Asp Pro Gln Glu Gln Ile Glu Tyr Lys Glu Leu		
115	120	125
Gln Gln Ile Ile Asn Arg Thr Leu Glu Lys Leu Pro Glu Arg Arg Leu		
130	135	140
His Ile Phe Arg Leu His His Thr Glu Gly Lys Lys Tyr Ser Glu Ile		
145	150	155
Ala Ser Leu Leu Ser Leu Ser Val Lys Thr Val Glu Lys Glu Met Thr		
165	170	175
Arg Ala Leu Arg Thr Leu Arg Lys Glu Ile Glu Asn Tyr Ile Gln Ile		
180	185	190
Ser		

<210> 6623  
 <211> 93  
 <212> PRT  
 <213> B.fragilis

<400> 6623
Arg Lys Ala Thr Pro Tyr Thr Ile Asp Thr Asp Gly Gly Ser Arg Cys
1 5 10 15
Leu Phe Ile Ser Glu Lys Val Met Glu Val Phe Asp Asp Gly Phe Asp
20 25 30
Tyr Arg Glu Val Ala Asn His Lys Glu Leu Thr Asp Leu Thr Val Ala
35 40 45
Leu Phe Ala Gly Met Ile Ser Ala Gln Pro Pro Arg Thr Ala Ala Met
50 55 60
Glu Val Pro Val Ala Cys Leu Arg Glu Asp Ala Arg Thr Gly Thr Asn
65 70 75 80
Gly Asn Gly His Ala Val Ala Pro Val Lys Arg Lys Gly
85 90

<210> 6624  
 <211> 296  
 <212> PRT  
 <213> B.fragilis

<400> 6624
Ile Ala Glu Thr Met Glu Ile Phe Ser Leu Lys Glu His Val Ser Cys
1 5 10 15
Tyr Asn Tyr Ala Lys Cys Ile Arg Glu Gly Phe Ser Tyr Tyr Glu Ser
20 25 30
Ser Lys Thr Glu Thr Asp Glu Gly Pro His Glu Thr Asp Cys Ile Leu
35 40 45
Phe Val Met Glu Gly Glu Leu Glu Leu Ser Cys Asn Gly Glu Arg Ile
50 55 60
Lys Leu Pro Ala Gly Asn Met Ile Cys Cys Ser Arg Glu Ser Met Tyr
65 70 75 80
Arg Val Phe Ser Gln Gly Lys Met Ser Ile Val Ile Ala Gln Phe Asp
85 90 95
Asn Ala Val Gln Ser Cys Glu Lys Val Ser Phe Ser Gln Leu Asn Ser
100 105 110
Leu Asn Ser Ser Gly Glu Lys Gly Ile Tyr Pro Leu Glu Ile Arg Asp
115 120 125
Arg Leu Gln Leu Phe Leu Lys Leu Leu Ile Gly Tyr Leu Gly Asp Gly
130 135 140
Ala Ser Cys Val His Phe His Glu Thr Lys Leu Lys Glu Leu Phe Trp
145 150 155 160

Asn Ile Arg Phe Tyr Tyr Thr Arg Thr Glu Gln Ala Ser Phe Phe Arg  
                           165                          170                          175  
 Pro Ile Leu Gly Asn Asp His Glu Phe Lys Lys Lys Val Leu Asp Asn  
                           180                          185                          190  
 Tyr Arg Asn Ala Arg Thr Val Lys Glu Leu Ala Gln Met Cys Glu Ser  
                           195                          200                          205  
 Ser Leu Ser Thr Phe Lys Arg Lys Phe Phe Lys Glu Phe Arg Glu Pro  
                           210                          215                          220  
 Ala Ser Glu Trp Leu Gln Lys Gln Met Asn Ser Ile Ile Lys Tyr Lys  
                           225                          230                          235                          240  
 Leu Ala Asp Glu Asp Ile Pro Ile Arg Asn Ile Ala Asp Glu Leu His  
                           245                          250                          255  
 Phe Ser Ser Gln Pro Gln Phe Cys Arg Tyr Cys Lys Arg Asn Phe Gly  
                           260                          265                          270  
 Tyr Thr Pro Gly Glu Trp Arg Lys Leu Leu Lys Asn Arg Asp Lys Thr  
                           275                          280                          285  
 Pro Arg Arg Pro Ser Gly Arg Val  
                           290                          295

&lt;210&gt; 6625

&lt;211&gt; 123

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6625

Pro Tyr Arg Thr Arg Gln Ser Leu Gln Gln Ile Glu Cys Arg Leu Met  
 1                          5                          10                          15  
 Ile Lys Cys Asp Pro Leu Cys Gly Asn Ser Thr Ile Ser Lys Val Ser  
                           20                          25                          30  
 Gly Gly Ile Cys Lys Thr Thr Lys Val Asn Phe Pro Val Tyr Gly Leu  
                           35                          40                          45  
 Ser Glu Asn Lys Arg Thr Arg Tyr Pro Met Ile Ala Ala Leu Ile Asp  
                           50                          55                          60  
 Arg Phe Asn Arg Lys Phe Leu Ala Ile His Met Leu Pro Tyr Leu Ile  
                           65                          70                          75                          80  
 Leu Thr Ile Glu Tyr Ile Ala Arg Arg Glu Ile Leu Ile Asp Ser His  
                           85                          90                          95  
 Leu Val Leu Tyr Ile Leu Ile Gly Cys Leu Ala Val Glu Ala Asp Met  
                           100                          105                          110  
 Gly Ala Val Ile Pro Tyr Val Asp Ser Gly Gly  
                           115                          120

&lt;210&gt; 6626

&lt;211&gt; 162

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6626

Ile Ile Met Thr Ser Lys Asp Phe Ile Glu Ala Glu Ala Gly Asn Asn  
 1                          5                          10                          15  
 Gly Ser Ile Ile Leu Tyr Arg Glu Gly Leu Phe Trp Lys Ala Tyr Glu  
                           20                          25                          30  
 Lys Ser Ala Tyr Ala Val Cys Thr Gln Ile Lys Pro Leu Lys Ala Ile  
                           35                          40                          45  
 Lys Arg Arg Leu Lys Ser Leu Gly Gly Gly Glu Ile Val Ser Val Gly  
                           50                          55                          60  
 Phe Pro Cys Lys His Glu Gln Lys Tyr Ile Gly Ser Leu Glu His Met  
                           65                          70                          75                          80  
 Glu Thr Met Pro Asp Arg Leu Val Leu Arg Thr Leu Lys Pro Ile Asp

				85					90					95			
Gly	Gln	Arg	Phe	Glu	Glu	Trp	Lys	Gln	Glu	Leu	Ser	Ser	Glu	His	Ser		
			100					105					110				
Val	Val	Gly	Arg	Arg	Asp	Ala	Cys	Val	Gln	Asn	Leu	Ser	Arg	Ser	Asn		
		115					120					125					
Ile	Pro	His	Gly	Glu	Leu	Ile	Met	Arg	Ile	Arg	Met	Phe	Asn	Leu	Ala		
	130					135					140						
Glu	Ser	Thr	Pro	Met	Asp	Cys	Met	Leu	Phe	Val	Asn	Glu	Leu	Lys	Lys		
145					150					155					160		
Met	Leu																

&lt;210&gt; 6627

&lt;211&gt; 63

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6627

Ala	Val	Ile	Ala	Phe	Cys	Lys	Ile	Glu	Thr	Ile	Ile	Lys	Ile	Ser	Tyr		
1				5				10					15				
Leu	Gln	Val	Thr	Gly	Glu	Glu	Val	Tyr	Arg	Ser	Leu	Ser	Thr	Tyr	Pro		
			20					25				30					
His	Gly	Leu	Val	Gly	Leu	Val	Asp	Glu	Pro	Asn	Trp	Ile	Gln	Lys	Phe		
		35					40					45					
Arg	Asp	Phe	Cys	Cys	Leu	Tyr	Asn	Tyr	Lys	Asn	His	Ala	Ile	Phe			
	50					55					60						

&lt;210&gt; 6628

&lt;211&gt; 428

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6628

Cys	Phe	Val	Ala	Phe	Met	Arg	Phe	Leu	Gln	Pro	Phe	Ser	Tyr	Lys	Gln		
1				5				10					15				
Leu	Ile	Tyr	Ile	Ile	Ile	Cys	Asn	Ser	Phe	Ile	Val	Met	Ala	Thr	Val		
			20					25				30					
Lys	Thr	Val	Leu	Val	Lys	Gly	Arg	Cys	Asn	Ser	Arg	Gly	Ala	Tyr	Pro		
		35					40					45					
Leu	Ala	Val	Gln	Val	Leu	His	Lys	Arg	Lys	Lys	Lys	Val	Phe	Tyr	Thr		
	50					55					60						
Gly	Tyr	Ser	Ile	Glu	Pro	Cys	Gln	Phe	Asp	Ser	Ile	Ser	Gly	Arg	Val		
65					70				75						80		
Ile	Phe	Asn	Gly	Met	Tyr	Thr	Met	Glu	Thr	Ile	Arg	Arg	Met	Asn	Arg		
				85					90					95			
Val	Cys	Arg	Lys	Ile	Ser	Lys	Val	Leu	Asp	Lys	Ala	Ile	Asp	Ile	Leu		
			100					105					110				
Glu	Lys	Gly	Asp	Ser	Glu	Tyr	Thr	Thr	Cys	Asp	Ile	Ser	Arg	Ile	Tyr		
		115					120					125					
Glu	Thr	Leu	Thr	Gly	Lys	Val	Gly	Phe	Tyr	Ser	Tyr	Phe	Gln	Glu	Arg		
	130					135					140						
Ile	Arg	Val	Leu	Phe	Asp	Thr	Gly	His	Glu	Gly	Thr	Ala	Lys	Ala	Tyr		
145					150					155					160		
Glu	Ser	Thr	Leu	His	Ser	Met	Gln	Arg	His	Leu	Cys	Glu	Ser	Asp	Phe		
			165						170					175			
Pro	Phe	Pro	His	Leu	Ser	Ser	Arg	Leu	Val	Ile	Lys	Tyr	Arg	Asp	Ala		
			180					185					190				
Leu	Gln	Glu	Ala	Gly	Val	Gly	Lys	Asn	Thr	Ile	Gly	Phe	Tyr	Leu	His		
		195					200					205					



Asn Met Lys Ala Val Tyr Arg Arg Gly Cys Leu Glu Leu Asn Leu Val  
 210 215 220  
 Phe Pro Ser Pro Phe Ser Asp Ile Arg Ile Arg Ser Glu Lys Thr Val  
 225 230 235 240  
 Lys Gln Ser Leu Pro Met Asn Gln Val Arg Ser Leu Ala Arg Leu Ser  
 245 250 255  
 Leu Ser Ala Gly Thr Pro Glu Cys Leu Ala Arg Asp Ile Phe Ile Phe  
 260 265 270  
 Ser Ile Tyr Thr Arg Gly Met Ser Phe Val Asp Ile Ala Leu Leu Lys  
 275 280 285  
 Lys Ser Asp Val Phe Pro Gly Val Ile Arg Tyr Arg Arg His Lys Thr  
 290 295 300  
 Gly Gln Leu Leu Glu Ile Gly Ile Asn Arg Gln Ile Gln Ser Leu Leu  
 305 310 315 320  
 Asp Arg Tyr Gly Asp Thr Ala Gly Asn Tyr Leu Phe Pro Leu Val Asp  
 325 330 335  
 Glu Ser Glu Thr Pro Tyr Ser Gly Tyr Lys Lys Ala Tyr Asn Lys Met  
 340 345 350  
 Arg Tyr Ala Leu Lys Lys Val Ser Lys Ser Ile Gly Met Asn Pro Pro  
 355 360 365  
 Leu Arg Leu His Ala Ala Arg His Cys Trp Ala Thr Met Ala Arg Glu  
 370 375 380  
 Asn Gly Thr Pro Leu His Thr Ile Ser Glu Cys Leu Gly His Ser Ser  
 385 390 395 400  
 Glu Lys Met Thr Arg Ile Tyr Leu Lys Glu Leu Asp Arg Ser Val Leu  
 405 410 415  
 Asp Glu Val Asn Asn His Ile Ala Asp Asn Ile Cys  
 420 425

&lt;210&gt; 6629

&lt;211&gt; 523

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6629

Thr Asp Thr Ala Met Glu Ile Arg Lys Gln Tyr Phe Lys Glu Lys Gln  
 1 5 10 15  
 Tyr Met Trp His Lys Val Arg Glu Leu Gln Leu Lys Gly Leu Asn Lys  
 20 25 30  
 Thr Gln Ile Gly Ile Tyr Leu Gly Val Asn Arg Lys Thr Val Arg Arg  
 35 40 45  
 Tyr Leu Asn Met Thr Met Glu Glu Phe Val Lys Lys Gln Ser Ser His  
 50 55 60  
 Arg Lys Tyr Arg Leu Lys Leu Glu Asn Tyr Glu Gln Tyr Val Arg Ala  
 65 70 75 80  
 Asn Leu Glu Glu Tyr Pro Tyr Ile Ser Ala Ala Arg Ile His Asp Trp  
 85 90 95  
 Leu Lys Glu Cys Tyr Pro Asp Phe Pro Arg Val Cys Asn Arg Thr Val  
 100 105 110  
 Ser Gly Phe Val Glu Arg Val Arg Lys Lys Tyr Gly Ile Gly Lys Lys  
 115 120 125  
 Val Glu Thr His Lys Arg Asn Tyr Glu Lys Gln Pro Asp Thr Pro Tyr  
 130 135 140  
 Gly Glu Tyr Ala Gln Ala Asp Phe Gly Glu Lys Trp Met Arg Thr Glu  
 145 150 155 160  
 Asn Gly Lys Ser Ile Lys Val Tyr Phe Phe Ala Ile Val Leu Ser Arg  
 165 170 175  
 Ser Arg Tyr Lys Phe Ile Tyr Phe Ser Arg Arg Pro Phe Asp Thr Gly  
 180 185 190

Leu Ala Val Tyr Ala His Glu Leu Ala Phe Glu Tyr Phe Gly Gly Arg  
 195 200 205  
 Pro Gln Lys Ile Ile Tyr Asp Gln Asp Lys Val Leu Ile Ala Arg Ala  
 210 215 220  
 Asn Met Gly Asp Leu Ile Leu Thr Gly Lys Phe Gln Ala Phe Val Lys  
 225 230 235 240  
 Glu Gln His Phe His Pro Val Phe Cys His Lys Ala Asp Pro Glu Ser  
 245 250 255  
 Lys Gly Lys Val Glu Asn Val Val Lys Tyr Val Lys Thr Asn Phe Leu  
 260 265 270  
 Thr Ala Arg Ile Phe Gln Asn Val Asp Arg Leu Asn Glu Glu Ala Arg  
 275 280 285  
 Leu Trp Leu Glu Arg Thr Gly Asn Gly Lys Glu His Gly Thr Thr His  
 290 295 300  
 Arg Ile Pro Leu Glu Glu Phe Ala Gln Glu Arg Glu Tyr Leu Val Pro  
 305 310 315 320  
 Tyr His Gly Thr Pro His Ser Pro Gly Gly Glu Met Lys Glu Tyr His  
 325 330 335  
 Val Arg Lys Asp Asn Thr Val Gln Tyr Arg Gly Asn Tyr Tyr Ser Leu  
 340 345 350  
 Pro Cys Gly Thr Tyr Arg Gly Gly Glu Thr Thr Val Trp Leu His Glu  
 355 360 365  
 Thr Asp Gly Cys Leu Glu Leu Tyr Asn Lys Glu Thr Gly Lys Leu Val  
 370 375 380  
 Cys Arg His Asp Leu Cys Glu Leu Lys Gly Lys Thr Ile Tyr Gly Glu  
 385 390 395 400  
 Gly His Arg Arg Gln Arg Asn Ile Gly Ala Gln Lys Leu Ala Glu Arg  
 405 410 415  
 Ile Leu Ile Tyr Val Ser Tyr Asn Arg Glu Val Ala Leu Trp Leu Glu  
 420 425 430  
 Asn Leu Gln Arg Arg Lys Glu Arg Tyr Tyr Arg Glu Asn Leu Glu Val  
 435 440 445  
 Ile Leu Arg Ile Ile Pro Gly Tyr Asp Lys Ala Ile Leu Thr Glu Ala  
 450 455 460  
 Val Ser Val Cys Leu Asp Lys Gly Ile Tyr Asn Gly Glu Ser Val Lys  
 465 470 475 480  
 Ser Leu Cys Gly His Ile Trp Lys Lys Lys Met Gly Glu Ser Asp Val  
 485 490 495  
 Gly Lys Asn Pro Ala Ser Arg Thr Gln Ser Thr Gly Leu Val Lys Thr  
 500 505 510  
 Tyr Asn Glu Ile Phe Arg Asn Asn Gly Lys Val  
 515 520

&lt;210&gt; 6630

&lt;211&gt; 478

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6630

Gln Thr Asp Ala Pro Leu Ser Thr Leu Ile Phe Lys Thr Phe Ile Thr  
 1 5 10 15  
 Met Asn Gln Thr Val Thr Glu Asn His Arg Leu Arg Asp Thr Ile Ile  
 20 25 30  
 Ile Gly Ala Gly Leu Thr Gly Leu Thr Thr Ala Tyr Cys Leu Thr Arg  
 35 40 45  
 Lys Gly Cys Asp Ile Glu Val Ile Glu Gln Ser Pro Cys Val Gly Gly  
 50 55 60  
 Gln Ile Arg Thr Tyr His Glu Asn Gly Phe Thr Phe Glu Ser Gly Pro  
 65 70 75 80

Asn	Thr	Gly	Val	Ile	Ser	His	Pro	Glu	Val	Ala	Glu	Leu	Leu	Ala	Glu
				85					90					95	
Leu	Ser	Pro	Thr	Cys	Arg	Leu	Glu	Thr	Ala	Arg	Glu	Ala	Ser	Arg	Gln
			100					105					110		
Arg	Leu	Ile	Trp	Lys	Gly	Asp	Arg	Phe	His	Ser	Leu	Pro	Ser	Gly	Leu
		115				120						125			
Phe	Ser	Ala	Ile	Thr	Thr	Pro	Leu	Phe	Ser	Thr	Lys	Asp	Lys	Phe	Asn
	130					135					140				
Ile	Leu	Gly	Glu	Pro	Phe	Arg	Ala	Lys	Gly	Asn	Asn	Pro	Asp	Glu	Thr
145					150					155					160
Ile	Gly	Glu	Leu	Val	Gln	Arg	Arg	Leu	Gly	Ile	Ser	Tyr	Leu	His	Tyr
				165					170					175	
Ala	Val	Asp	Pro	Phe	Ile	Ser	Gly	Val	Tyr	Ala	Gly	Asp	Pro	Met	Arg
			180					185					190		
Leu	Val	Thr	Arg	His	Ala	Leu	Pro	Lys	Leu	Tyr	Gln	Leu	Glu	Gln	Thr
		195					200					205			
Tyr	Gly	Ser	Phe	Ile	Leu	Gly	Gly	Ile	Ala	Lys	Ser	Phe	Ser	His	Arg
	210					215					220				
Ser	Glu	His	Asp	Arg	Leu	Ala	Thr	Arg	Lys	Val	Phe	Ser	Thr	Tyr	Gly
225					230					235					240
Gly	Leu	Ser	Asn	Leu	Thr	Lys	Ala	Leu	Glu	Gln	Ala	Ile	Gly	Ile	Lys
			245						250					255	
Arg	Phe	Ser	Leu	Gly	Ala	Thr	Ser	Thr	Ser	Leu	Met	Pro	Cys	Glu	Gln
			260					265						270	
Gly	Trp	Val	Val	Ser	Phe	Thr	Asp	Ser	Cys	Gly	Ile	Val	Asn	Arg	Ile
		275					280					285			
His	Cys	Arg	Lys	Val	Ile	Thr	Thr	Thr	Pro	Ala	Phe	Val	Leu	Pro	Ser
	290					295					300				
Leu	Leu	Pro	Phe	Val	Pro	Asp	Lys	Gln	Met	Asn	Arg	Ile	Ser	Asn	Leu
305					310					315					320
Thr	Tyr	Ala	Pro	Val	Met	Gln	Val	Ser	Val	Gly	Leu	Arg	Asn	Thr	Tyr
			325						330					335	
Gly	Lys	Glu	Phe	His	Ala	Phe	Gly	Gly	Leu	Val	Pro	Ser	Cys	Glu	Gln
			340				345						350		
Lys	Pro	Val	Leu	Gly	Ile	Leu	Phe	Pro	Ser	Ala	Cys	Phe	Asp	Asn	Arg
		355					360					365			
Ser	Pro	Glu	Gly	Gly	Ala	Leu	Tyr	Ser	Tyr	Phe	Leu	Gly	Gly	Thr	Arg
	370					375					380				
His	Pro	Glu	Leu	Leu	Glu	Lys	Ser	Asp	Asp	Glu	Ile	Ile	Arg	Leu	Ile
385					390					395					400
Thr	Thr	Gly	Leu	Asn	Glu	Met	Leu	Asp	Tyr	Pro	Ala	Gly	Ile	Val	Pro
				405					410					415	
Asp	Leu	Ile	Arg	Ile	Phe	Arg	His	Lys	Lys	Ala	Ile	Pro	Gln	Tyr	Glu
			420					425					430		
Ser	Ser	Ser	Thr	Asp	Arg	Phe	Ala	Ala	Ile	Asn	Glu	Leu	Gln	Lys	Gln
		435					440						445		
Tyr	Pro	Gly	Leu	Val	Val	Ala	Gly	Asn	Leu	Lys	Gly	Gly	Ile	Gly	Met
	450					455					460				
Ala	Asp	Arg	Ile	Lys	Gln	Ala	Val	Glu	Ile	Ala	Arg	Glu	Arg		
465					470					475					

&lt;210&gt; 6631

&lt;211&gt; 157

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6631

Gly	Thr	Ser	Ala	Ile	Pro	Thr	Asp	Leu	Thr	Val	Ser	Phe	Val	Ala	Leu
1				5					10					15	

1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378</
------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	--------

<400> 6632

```
<210> 6633
<211> 62
<212> PRT
<213> B.fragilis
```

<400> 6633

```
<210> 6634
<211> 67
<212> PRT
<213> B.fragilis
```

<400> 6634

Asn Tyr Asn Leu Gln Gly Gln Arg Ala Gln Asp Val Glu Ala Val Phe  
 1 5 10 15  
 Gly Asn Leu Lys Thr Thr Asn Asn Pro Arg Arg Phe Tyr Leu Arg Arg  
 20 25 30  
 Val Glu Lys Val Asp Ile Glu Phe Gly Leu Leu Ala Ile Ala Tyr Asn  
 35 40 45  
 Leu Ala Lys Val Ala Ser Ser Thr Thr Phe Cys Ala Pro Lys Asp Ile  
 50 55 60  
 Leu Lys Gly  
 65

&lt;210&gt; 6635

&lt;211&gt; 527

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6635

Ser Arg Asn Gln Asn Pro Lys Thr Met Lys Ala Ser Lys Ser Leu Cys  
 1 5 10 15  
 Leu Gln Cys Leu Phe Thr Cys Leu Leu Leu Phe Ile Ala Ala Arg Val  
 20 25 30  
 Lys Ala Asp Asp Ser Gly Ile Leu Asp Arg Ile Ile Arg Leu Pro Lys  
 35 40 45  
 Ser Glu Met Thr Val Tyr Lys Leu Leu Ser Lys Ile Thr Glu Glu Thr  
 50 55 60  
 Gly Tyr Leu Phe Ile Tyr Asp Ser Lys Leu Val Asp Asn Glu Arg Thr  
 65 70 75 80  
 Val Lys Leu Lys Gly Gly Lys Gln Thr Val Arg Gln Ala Ile Tyr Ser  
 85 90 95  
 Ile Ile Gly Asn Asp Asn Leu Lys Leu Arg Ser Val Asp Lys His Ile  
 100 105 110  
 Ile Ile Tyr Arg Pro Glu Thr Ala Leu Ser Ile Ser Lys Glu Glu Gly  
 115 120 125  
 Leu Cys Arg Asp Ser Thr Leu Ser Phe Thr Leu Glu Gly Thr Leu Ile  
 130 135 140  
 Asp Gln Leu Ser Arg Glu Pro Ile Pro Tyr Ala Thr Val Gly Ala Glu  
 145 150 155 160  
 Gly Ser Ser Ile Gly Ser Val Thr Asn Gln Asn Gly Ser Phe Arg Leu  
 165 170 175  
 His Leu Pro Asp Ser Leu Arg Asn Gly Arg Ile Arg Phe Ser His Leu  
 180 185 190  
 Gly Tyr Val Pro Gln Thr Thr Asp Ala Ser Leu Leu Ala Gly Arg Asn  
 195 200 205  
 Gly Thr Phe Ala Leu Glu Pro Lys Val Ile Pro Leu Gln Glu Val Ile  
 210 215 220  
 Val Arg Ile Val Asn Pro Val Arg Leu Leu Arg Glu Met Leu Gln Phe  
 225 230 235 240  
 Arg Lys Lys Asn Tyr Ser Lys Val Pro Val Tyr Leu Thr Ser Phe Tyr  
 245 250 255  
 Arg Glu Gly Ile Glu Gln Lys Asn Arg Phe Val Ser Leu Thr Glu Gly  
 260 265 270  
 Ile Phe Lys Ile Tyr Lys Ala Ser Ser Ser Thr Pro Glu Lys Thr Asp  
 275 280 285  
 Gln Val Lys Leu Leu Lys Met Arg Arg Ile Thr Asn Gln Ala Val Lys  
 290 295 300  
 Asp Thr Leu Ile Ala Lys Met Lys Ser Gly Ile His Ala Ser Ile Glu  
 305 310 315 320  
 Leu Asp Leu Ile Lys Ser Leu Pro Asp Phe Leu Leu Pro Asp Ser Lys  
 325 330 335

1  
 2  
 3  
 4  
 5  
 6  
 7  
 8  
 9  
 10  
 11  
 12  
 13  
 14  
 15  
 16  
 17  
 18  
 19  
 20  
 21  
 22  
 23  
 24  
 25  
 26  
 27  
 28  
 29  
 30  
 31  
 32  
 33  
 34  
 35  
 36  
 37  
 38  
 39  
 40  
 41  
 42  
 43  
 44  
 45  
 46  
 47  
 48  
 49  
 50  
 51  
 52  
 53  
 54  
 55  
 56  
 57  
 58  
 59  
 60  
 61  
 62  
 63  
 64  
 65  
 66  
 67  
 68  
 69  
 70  
 71  
 72  
 73  
 74  
 75  
 76  
 77  
 78  
 79  
 80  
 81  
 82  
 83  
 84  
 85  
 86  
 87  
 88  
 89  
 90  
 91  
 92  
 93  
 94  
 95  
 96  
 97  
 98  
 99  
 100

Glu Cys Val Tyr Val Tyr Thr Ser Ser Asp Leu Ala Ile Ile Asp Asn  
 340 345 350  
 Arg Leu Ala His Val Val Ser Phe Glu Gln Arg Pro Ser Ile Lys Tyr  
 355 360 365  
 Pro Tyr Tyr Cys Gly Glu Leu Tyr Ile Asp Ser Glu Asn Ser Ala Leu  
 370 375 380  
 Leu Arg Ala Arg Phe Glu Leu Thr Pro Arg Tyr Ile His Lys Ala Ala  
 385 390 395 400  
 Asn Met Leu Val Glu Lys Arg Ser Arg Asn Ile Arg Ile Ile Pro Gln  
 405 410 415  
 Lys Val Val Tyr Thr Val Ser Tyr Lys Pro Trp Lys Gln Thr Tyr Tyr  
 420 425 430  
 Ile His His Val Arg Gly Asp Leu His Phe Lys Ile Lys Gln Lys Asn  
 435 440 445  
 Lys Trp Leu Asn Asn Thr Ile Leu His Thr Trp Phe Glu Met Val Thr  
 450 455 460  
 Cys Lys Ile Glu Thr Asp Asn Val Ser Arg Phe Asp His Asn Glu Arg  
 465 470 475 480  
 Leu Ser Val His Thr Ile Phe Ala Glu Ile Pro Phe Val Tyr Asp Lys  
 485 490 495  
 Ser Phe Trp Glu Asp Phe Asn Val Ile Pro Pro Glu Lys Glu Leu Ser  
 500 505 510  
 Glu Ala Ile Glu Lys Ile Ser Ser Lys Ile Glu Glu Thr Glu Asn  
 515 520 525

&lt;210&gt; 6636

&lt;211&gt; 187

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6636

Lys Ile Lys His Leu Ile Thr Met Ile Val Gln Asp Leu Asn Phe Asp  
 1 5 10 15  
 Gln Thr Val Ala Met Ala Lys Ala Lys Ala Glu Ser Met Ile Gln Asn  
 20 25 30  
 Gly Leu Tyr Ser Arg Phe Gly Leu Ser Glu Lys Glu Arg Leu Asp Lys  
 35 40 45  
 Ala Leu Leu Gly Cys Ile Gly Glu Leu Ala Phe Gln Lys His Leu Lys  
 50 55 60  
 Asn Leu Gly Ile Pro Phe Glu Leu Asp Gln Thr Asp Phe Gln Ser His  
 65 70 75 80  
 His Ser Asp Glu Phe Asp Val Lys Val Asn Gly Ala Lys Ile Asp Ile  
 85 90 95  
 Lys Val Ala Lys Lys Thr Thr Ala Asn Pro Pro Thr Asp Asn Trp Thr  
 100 105 110  
 Tyr Gly Tyr Pro Gln Glu Gln His Pro Glu Thr Lys Asp Tyr Val Val  
 115 120 125  
 Val Gly Trp Val Asp Phe Asn Arg Lys Glu Val Gly Phe Tyr Gly Trp  
 130 135 140  
 Ile Arg Gly Lys Gln Ile Val Glu Phe Lys Val Val Thr Gln Asn Ser  
 145 150 155 160  
 Tyr Ala Lys Tyr Pro Tyr Leu Thr Pro Asn His Glu Phe Lys Trp Gly  
 165 170 175  
 Cys Leu Thr Lys Asp Leu Asn Glu Ile Leu Lys  
 180 185

&lt;210&gt; 6637

&lt;211&gt; 434

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6637

```

Ile Thr Met His Met Phe Lys Lys Leu Leu Ile Leu Leu Leu Ser Leu
1      5      10      15
Leu Asp Cys Ile Pro Val Phe Cys Gly Gly Asp Thr Leu His Tyr Arg
20      25      30
Phe Tyr Phe Arg Val Gly Ala Ser Leu Asp Leu Ser Tyr Arg Asp
35      40      45
Asn Gly Leu Arg Leu Asp Ser Leu Leu Ser Val Ile His Ser Arg Gln
50      55      60
Ala His Ala Val Leu Arg Arg Val Ser Leu Tyr Ser Ser Ala Ser Pro
65      70      75      80
Glu Gly Gly Ser Ala Leu Asn Lys Arg Leu Ser Asp Arg Arg Leu Ala
85      90      95
Ser Leu Arg Thr Val Ile Gln His Arg Leu Ala Ile Pro Asp Ser Ile
100     105     110
Leu Ile Ser Phe Ser Leu Gly Glu Asp Trp Asp Gly Leu Ser Ser Leu
115     120     125
Val Glu Gly Ser Asp Ile Pro Tyr Arg Gly Glu Val Leu Arg Ile Leu
130     135     140
Arg Asp Thr Pro Val Trp Val Ile Arg Asn Gly Ile Val Val Asp Ser
145     150     155     160
Arg Lys Arg Gln Leu Met Asn Leu Arg Gly Gly Arg Val Trp Arg Tyr
165     170     175
Met His Glu His Phe Phe Pro Glu Leu Arg Asn Ser Ser Val Ile Glu
180     185     190
Cys Glu Phe Glu Pro Phe Val Ala Glu Asn Asp Asp Val Pro Ala Pro
195     200     205
Ser Gln Lys Gly Val Cys Pro Pro Asp Thr Val Ile Leu Arg Asp Thr
210     215     220
Val Glu Arg Ala Ile Met Met Arg Asp Thr Val Glu Val Pro Val Pro
225     230     235     240
Ile Ala Asn Ile Pro Lys Pro Phe Tyr Met Gly Leu Lys Thr Asn Leu
245     250     255
Leu Tyr Asp Ala Leu Leu Val Pro Asn Ile Gly Val Glu Phe Tyr Leu
260     265     270
Gly Lys Gly Trp Ser Leu Gly Gly Asn Trp Met Tyr Ala Trp Trp Asn
275     280     285
Asn Asp Arg Arg His Arg Tyr Trp Arg Val Tyr Gly Gly Glu Ile Gly
290     295     300
Leu Arg Lys Tyr Phe Ala Pro Arg Ala Ala Tyr Thr Pro Phe Ile Gly
305     310     315     320
His His Val Gly Leu Tyr Gly Gln Met Leu Thr Tyr Asp Phe Glu Phe
325     330     335
Gly Gly Lys Gly Tyr Met Gly Gly Arg Pro Gly Gly Ser Leu Trp Glu
340     345     350
Lys Ser Asn Tyr Gly Phe Gly Leu Glu Tyr Gly Tyr Ser Leu Ala Ile
355     360     365
Gly Arg Arg Leu Asn Leu Asp Phe Ser Leu Gly Val Gly Tyr Leu Gly
370     375     380
Gly Thr Tyr Tyr Glu Tyr Ala Pro Met Asp Gly His Tyr Val Trp Glu
385     390     395     400
Ala Thr Lys Asn Arg Arg Trp Phe Gly Pro Thr Lys Ala Glu Val Ser
405     410     415
Leu Val Trp Leu Leu Gly Arg Gly Asn Tyr Asn Asp Lys Lys Gly Gly
420     425     430
Arg Arg

```

<210> 6638  
 <211> 324  
 <212> PRT  
 <213> B.fragilis

<400> 6638

Arg His Met Gln Tyr Val Gly Ile Gln Thr Gln Gln Ser Arg Asn Asn  
 1 5 10 15  
 Leu Arg Ser Gly Ile Leu Leu Ile Leu Phe Pro Cys Leu Val Ala Val  
 20 25 30  
 Leu Thr Tyr Leu Phe Cys Tyr Leu Leu Ile Thr Phe Thr Val Glu Asp  
 35 40 45  
 Asp Tyr Gly Gln Tyr Asn Thr Leu Ala Met Thr Asn Gln Met Phe Ile  
 50 55 60  
 Asn Leu Ile Pro Tyr Ile Ile Gly Gly Val Leu Val Trp Phe Ile Ile  
 65 70 75 80  
 Ala Tyr Phe Thr Asn Ser Ser Ile Ile Lys Ala Ala Thr Gly Ala Arg  
 85 90 95  
 Pro Leu Glu Arg Lys Glu Asn Lys Arg Ile Tyr Asn Leu Val Glu Asn  
 100 105 110  
 Leu Cys Met Ser Gln Gly Met Lys Met Pro Lys Ile Asn Ile Ile Asp  
 115 120 125  
 Asp Asp Ser Leu Asn Ala Tyr Ala Ser Gly Ile Asn Glu Gln Thr Tyr  
 130 135 140  
 Thr Val Thr Leu Ser Lys Gly Ile Ile Glu Lys Leu Asn Asp Glu Glu  
 145 150 155 160  
 Leu Glu Gly Val Ile Ala His Glu Leu Thr His Ile Arg Asn His Asp  
 165 170 175  
 Val Arg Leu Leu Ile Ile Ser Ile Val Phe Val Gly Ile Phe Ser Met  
 180 185 190  
 Leu Ala Gln Ile Ala Leu Arg Ser Val Tyr Tyr Ser Ser Trp Thr Arg  
 195 200 205  
 Ser Arg Asn Asp Lys Asn Asn Gly Ala Ile Leu Ile Leu Val Leu Ala  
 210 215 220  
 Met Ile Val Ala Ala Ile Gly Tyr Phe Phe Ala Thr Leu Met Arg Phe  
 225 230 235 240  
 Ala Ile Ser Arg Lys Arg Glu Tyr Met Ala Asp Ala Gly Ala Ala Glu  
 245 250 255  
 Met Thr Lys Asn Pro Leu Ala Leu Ala Ser Ala Leu Arg Lys Ile Ser  
 260 265 270  
 Ala Asp Pro Asp Ile Glu Ala Val Glu Arg Glu Asp Val Ala Gln Leu  
 275 280 285  
 Phe Ile Gln His Pro Gly Lys Gln Ala Lys Ser Ala Leu Ser Gly Leu  
 290 295 300  
 Ser Gly Leu Phe Ala Thr His Pro Pro Ile Glu Lys Arg Ile Ala Ile  
 305 310 315 320  
 Leu Glu Gln Phe

<210> 6639  
 <211> 133  
 <212> PRT  
 <213> B.fragilis

<400> 6639

Gln Glu Gln Gln Asn Leu Phe Pro Glu Asn Gln Gly Ser Lys Gly Thr  
 1 5 10 15  
 Val Trp Leu Tyr Leu Glu Ser Lys Arg Gly Ile Pro His Leu His Gly



		20						25					30				
Thr	Phe	Cys	Arg	Ile	Asp	Glu	Arg	Gly	Asn	Val	Asn	Asn	Asp	His	Asp		
		35					40					45					
Ile	His	Leu	Arg	Ala	Gln	Arg	Ala	Ala	Gly	Arg	Val	Ala	Leu	Lys	Arg		
		50				55					60						
Gly	Trp	Met	Thr	Ala	Ala	Glu	Val	Arg	Glu	Thr	Asn	Ile	Gly	His	Val		
65					70				75					80			
Asn	Arg	Asp	Cys	Met	Glu	Pro	Leu	Gln	Ser	Met	Lys	Ser	Arg	Ser	Trp		
			85					90						95			
Asp	Glu	Tyr	Ala	Ala	Gly	Leu	Gln	Ser	Met	Gly	Tyr	Lys	Phe	Trp	Glu		
		100						105					110				
Pro	Arg	Asp	Asn	Lys	Lys	Ile	Leu	His	Gly	Tyr	Val	Leu	Lys	Lys	Gly		
		115				120						125					
Asn	Ala	Ile	Tyr	Tyr													
		130															

&lt;210&gt; 6640

&lt;211&gt; 322

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6640

Glu	Arg	Arg	Gln	Thr	Met	Asn	Arg	Ile	Leu	Thr	Thr	Asn	His	Ile	Leu		
1			5					10					15				
His	Val	Val	Ser	Val	Phe	Thr	Ile	Leu	Leu	Thr	Ser	Cys	Glu	His			
		20					25				30						
Lys	Asp	Leu	Cys	Tyr	Asp	His	Ser	Asp	Ala	Thr	Glu	Ile	Gln	Val	Val		
		35				40					45						
Phe	Asp	Trp	Thr	Asn	Ala	Pro	Asp	Ala	Thr	Pro	Glu	Thr	Met	Arg	Leu		
	50				55				60								
Tyr	Leu	Phe	Pro	Val	Gly	Gly	Gly	Thr	Pro	His	Thr	Tyr	Glu	Phe	Pro		
65				70				75						80			
Asp	Tyr	Arg	Gly	Gly	Arg	Ile	Asn	Val	Pro	Ala	Gly	Arg	Tyr	Lys	Ala		
			85				90						95				
Leu	Cys	Ile	Asn	Ser	Asp	Thr	Glu	Ser	Ile	Leu	Tyr	Arg	Asn	Ile	Asp		
		100					105					110					
Ser	Phe	Asp	Ser	Phe	Glu	Ala	Tyr	Ala	Ala	Asp	Gly	Val	Leu	Asn	Val		
	115					120					125						
Arg	Ser	Ser	Ser	Pro	Arg	Ala	Glu	Gly	Thr	Ala	Asp	Glu	Arg	Ile			
	130			135					140								
Ala	Arg	Ser	Pro	Asp	Arg	Phe	Tyr	Ser	Ala	Arg	Leu	Asp	Asp	Val	Thr		
145				150				155						160			
Ile	Glu	Leu	Ser	Lys	Glu	Asn	Arg	Thr	Val	Thr	Leu	Tyr	Pro	Glu	Pro		
			165					170					175				
Ser	Val	Cys	Arg	Cys	Arg	Val	Thr	Ile	Thr	Asn	Val	Ser	Asn	Leu	Lys		
		180					185				190						
Tyr	Ile	Ser	Ser	Asp	Gly	Ile	Ser	Gly	Ala	Leu	Ser	Gly	Met	Cys	Gly		
	195			200							205						
Gly	Leu	Leu	Val	Gly	Arg	Asn	Glu	Ala	Thr	Ser	Asp	Pro	Val	Thr	Val		
	210			215						220							
Pro	Phe	Gly	Val	Val	Ser	Asp	Gly	Ala	Ser	Thr	Leu	Thr	Ala	Asp	Phe		
225				230				235						240			
Leu	Val	Phe	Gly	Gln	Ile	Gly	Pro	Ser	Gly	Tyr	Pro	Ala	His	Lys	Leu		
			245					250						255			
Val	Ile	Tyr	Ala	Ile	Met	Ser	Asp	Gly	Ser	Lys	Asn	Tyr	Tyr	Thr	Phe		
	260						265					270					
Asp	Val	Thr	Arg	Gln	Val	Asp	Glu	Ala	Ala	Asp	Ser	His	Asp	Ile	His		
	275					280						285					
Ile	Thr	Leu	Asp	Gly	Leu	Pro	Phe	Pro	Lys	Pro	Ile	Val	Asn	Gly	Gly		

1  
 2  
 3  
 4  
 5  
 6  
 7  
 8  
 9  
 10  
 11  
 12  
 13  
 14  
 15  
 16  
 17  
 18  
 19  
 20  
 21  
 22  
 23  
 24  
 25  
 26  
 27  
 28  
 29  
 30  
 31  
 32  
 33  
 34  
 35  
 36  
 37  
 38  
 39  
 40  
 41  
 42  
 43  
 44  
 45  
 46  
 47  
 48  
 49  
 50  
 51  
 52  
 53  
 54  
 55  
 56  
 57  
 58  
 59  
 60  
 61  
 62  
 63  
 64  
 65  
 66  
 67  
 68  
 69  
 70  
 71  
 72  
 73  
 74  
 75  
 76  
 77  
 78  
 79  
 80  
 81  
 82  
 83  
 84  
 85  
 86  
 87  
 88  
 89  
 90  
 91  
 92  
 93  
 94  
 95  
 96  
 97  
 98  
 99  
 100  
 101  
 102  
 103  
 104  
 105  
 106  
 107  
 108  
 109  
 110  
 111  
 112  
 113  
 114  
 115  
 116  
 117  
 118  
 119  
 120  
 121  
 122  
 123  
 124  
 125  
 126  
 127  
 128  
 129  
 130  
 131  
 132  
 133  
 134  
 135  
 136  
 137  
 138  
 139  
 140  
 141  
 142  
 143  
 144  
 145  
 146  
 147  
 148  
 149  
 150  
 151  
 152  
 153  
 154  
 155  
 156  
 157  
 158  
 159  
 160  
 161  
 162  
 163  
 164  
 165  
 166  
 167  
 168  
 169  
 170  
 171  
 172  
 173  
 174  
 175  
 176  
 177  
 178  
 179  
 180  
 181  
 182  
 183  
 184  
 185  
 186  
 187  
 188  
 189  
 190  
 191  
 192  
 193  
 194  
 195  
 196  
 197  
 198  
 199  
 200  
 201  
 202  
 203  
 204  
 205  
 206  
 207  
 208  
 209  
 210  
 211  
 212  
 213  
 214  
 215  
 216  
 217  
 218  
 219  
 220  
 221  
 222  
 223  
 224  
 225  
 226  
 227  
 228  
 229  
 230  
 231  
 232  
 233  
 234  
 235  
 236  
 237  
 238  
 239  
 240  
 241  
 242  
 243  
 244  
 245  
 246  
 247  
 248  
 249  
 250  
 251  
 252  
 253  
 254  
 255  
 256  
 257  
 258  
 259  
 260  
 261  
 262  
 263  
 264  
 265  
 266  
 267  
 268  
 269  
 270  
 271  
 272  
 273  
 274  
 275  
 276  
 277  
 278  
 279  
 280  
 281  
 282  
 283  
 284  
 285  
 286  
 287  
 288  
 289  
 290  
 291  
 292  
 293  
 294  
 295  
 296  
 297  
 298  
 299  
 300  
 301  
 302  
 303  
 304  
 305  
 306  
 307  
 308  
 309  
 310  
 311  
 312  
 313  
 314  
 315  
 316  
 317  
 318  
 319  
 320  
 321  
 322  
 323  
 324  
 325  
 326  
 327  
 328  
 329  
 330  
 331  
 332  
 333  
 334  
 335  
 336  
 337  
 338  
 339  
 340  
 341  
 342  
 343  
 344  
 345  
 346  
 347  
 348  
 349  
 350  
 351  
 352  
 353  
 354  
 355  
 356  
 357  
 358  
 359  
 360  
 361  
 362  
 363  
 364  
 365  
 366  
 367  
 368  
 369  
 370  
 371  
 372  
 373  
 374  
 375  
 376  
 377  
 378  
 379  
 380  
 381  
 382  
 383  
 384  
 385  
 386  
 387  
 388  
 389  
 390  
 391  
 392  
 393  
 394  
 395  
 396  
 397  
 398  
 399  
 400

290 295 300  
 Gly Phe His Pro Ala Val Asp Glu Trp Gln Asn Val Asp Val Asp Val  
 305 310 315 320  
 Ser Met

<210> 6641  
 <211> 242  
 <212> PRT  
 <213> B.fragilis

<400> 6641  
 Glu Arg Arg His Glu Met Lys Lys Val Tyr Thr Val Met Glu Tyr Val  
 1 5 10 15  
 Pro Leu Leu Ala Gly Met Leu Met Leu Leu Ser Ser Cys Gly His Lys  
 20 25 30  
 Asp Leu Cys Phe Asp His Asp Val His Ala Pro Lys Ser Glu Val Arg  
 35 40 45  
 Ile Glu Ala Arg Tyr Glu Lys Glu Trp Gln Tyr Thr His Glu Gly Ser  
 50 55 60  
 Thr Asp Trp Lys Ser His Ser Thr Trp Pro Glu Ser Phe Gly Met Glu  
 65 70 75 80  
 Tyr Asp Ala Leu Arg Pro Gly Ile Pro Asp Gly Leu Arg Val Gln Val  
 85 90 95  
 Tyr Asn Ala Asp Gly Ser Asp Glu Ile Ile Asn Thr Ala Pro Glu Gly  
 100 105 110  
 Asp Val Val Tyr Met Arg Pro Gly Glu His Ser Leu Leu Phe Tyr Asn  
 115 120 125  
 Asn Tyr Thr Glu Tyr Ile Val Phe His Glu Met Gln Ser Phe Ala Ser  
 130 135 140  
 Ala Lys Ala Thr Thr Arg Thr Arg Thr Arg Ser Ser Tyr Leu Gly Asn  
 145 150 155 160  
 Ser Tyr Met Glu Thr Ala Ser Glu Asn Thr Val Asn Gln Pro Asp Met  
 165 170 175  
 Leu Tyr Arg Ser Tyr Met Glu Ser Tyr Cys Gly Gly Thr Leu Asp Arg  
 180 185 190  
 Asn Arg Arg Asp Thr Arg His His Ala Pro Asp Gly Val His Leu Ser  
 195 200 205  
 Gly Thr Leu Arg Val Gln Pro Arg Gly Gly Ile Arg Val Ser Gly Thr  
 210 215 220  
 Arg Cys Leu Gly Trp Tyr Gly Ala Gly Gly Met Val Glu Gln Arg Thr  
 225 230 235 240  
 His Val

<210> 6642  
 <211> 67  
 <212> PRT  
 <213> B.fragilis

<400> 6642  
 Leu Trp Val Asn Phe Ser Val Phe Ile Phe Ala Ala Val Asn Lys Gln  
 1 5 10 15  
 Thr Thr Lys Pro Asp Leu Arg Asn Thr Val Ser Ile Thr Leu Lys Thr  
 20 25 30  
 Leu Glu Phe Cys Phe Pro Phe Phe Pro Ile His Ala Gly Thr Thr Thr  
 35 40 45  
 Phe Gln Lys Glu Ser Ile Trp Val Leu Ser Lys Gln Val Ile Pro Leu  
 50 55 60

1. **Introduction**  
 2. **Background**  
 3. **Methodology**  
 4. **Results**  
 5. **Discussion**  
 6. **Conclusion**  
 7. **References**  
 8. **Appendix**  
 9. **Index**  
 10. **Table of Contents**  
 11. **Abstract**  
 12. **Summary**  
 13. **Key Words**  
 14. **Keywords**  
 15. **Subject Headings**  
 16. **Classification**  
 17. **Indexing**  
 18. **Keywords**  
 19. **Subject Headings**  
 20. **Classification**  
 21. **Indexing**  
 22. **Keywords**  
 23. **Subject Headings**  
 24. **Classification**  
 25. **Indexing**  
 26. **Keywords**  
 27. **Subject Headings**  
 28. **Classification**  
 29. **Indexing**  
 30. **Keywords**  
 31. **Subject Headings**  
 32. **Classification**  
 33. **Indexing**  
 34. **Keywords**  
 35. **Subject Headings**  
 36. **Classification**  
 37. **Indexing**  
 38. **Keywords**  
 39. **Subject Headings**  
 40. **Classification**  
 41. **Indexing**  
 42. **Keywords**  
 43. **Subject Headings**  
 44. **Classification**  
 45. **Indexing**  
 46. **Keywords**  
 47. **Subject Headings**  
 48. **Classification**  
 49. **Indexing**  
 50. **Keywords**  
 51. **Subject Headings**  
 52. **Classification**  
 53. **Indexing**  
 54. **Keywords**  
 55. **Subject Headings**  
 56. **Classification**  
 57. **Indexing**  
 58. **Keywords**  
 59. **Subject Headings**  
 60. **Classification**  
 61. **Indexing**  
 62. **Keywords**  
 63. **Subject Headings**  
 64. **Classification**  
 65. **Indexing**  
 66. **Keywords**  
 67. **Subject Headings**  
 68. **Classification**  
 69. **Indexing**  
 70. **Keywords**  
 71. **Subject Headings**  
 72. **Classification**  
 73. **Indexing**  
 74. **Keywords**  
 75. **Subject Headings**  
 76. **Classification**  
 77. **Indexing**  
 78. **Keywords**  
 79. **Subject Headings**  
 80. **Classification**  
 81. **Indexing**  
 82. **Keywords**  
 83. **Subject Headings**  
 84. **Classification**  
 85. **Indexing**  
 86. **Keywords**  
 87. **Subject Headings**  
 88. **Classification**  
 89. **Indexing**  
 90. **Keywords**  
 91. **Subject Headings**  
 92. **Classification**  
 93. **Indexing**  
 94. **Keywords**  
 95. **Subject Headings**  
 96. **Classification**  
 97. **Indexing**  
 98. **Keywords**  
 99. **Subject Headings**  
 100. **Classification**  
 101. **Indexing**  
 102. **Keywords**  
 103. **Subject Headings**  
 104. **Classification**  
 105. **Indexing**  
 106. **Keywords**  
 107. **Subject Headings**  
 108. **Classification**  
 109. **Indexing**  
 110. **Keywords**  
 111. **Subject Headings**  
 112. **Classification**  
 113. **Indexing**  
 114. **Keywords**  
 115. **Subject Headings**  
 116. **Classification**  
 117. **Indexing**  
 118. **Keywords**  
 119. **Subject Headings**  
 120. **Classification**  
 121. **Indexing**  
 122. **Keywords**  
 123. **Subject Headings**  
 124. **Classification**  
 125. **Indexing**  
 126. **Keywords**  
 127. **Subject Headings**  
 128. **Classification**  
 129. **Indexing**  
 130. **Keywords**  
 131. **Subject Headings**  
 132. **Classification**  
 133. **Indexing**  
 134. **Keywords**  
 135. **Subject Headings**  
 136. **Classification**  
 137. **Indexing**  
 138. **Keywords**  
 139. **Subject Headings**  
 140. **Classification**  
 141. **Indexing**  
 142. **Keywords**  
 143. **Subject Headings**  
 144. **Classification**  
 145. **Indexing**  
 146. **Keywords**  
 147. **Subject Headings**  
 148. **Classification**  
 149. **Indexing**  
 150. **Keywords**  
 151. **Subject Headings**  
 152. **Classification**  
 153. **Indexing**  
 154. **Keywords**  
 155. **Subject Headings**  
 156. **Classification**  
 157. **Indexing**  
 158. **Keywords**  
 159. **Subject Headings**  
 160. **Classification**  
 161. **Indexing**  
 162. **Keywords**  
 163. **Subject Headings**  
 164. **Classification**  
 165. **Indexing**  
 166. **Keywords**  
 167. **Subject Headings**  
 168. **Classification**  
 169. **Indexing**  
 170. **Keywords**  
 171. **Subject Headings**  
 172. **Classification**  
 173. **Indexing**  
 174. **Keywords**  
 175. **Subject Headings**  
 176. **Classification**  
 177. **Indexing**  
 178. **Keywords**  
 179. **Subject Headings**  
 180. **Classification**  
 181. **Indexing**  
 182. **Keywords**  
 183. **Subject Headings**  
 184. **Classification**  
 185. **Indexing**  
 186. **Keywords**  
 187. **Subject Headings**  
 188. **Classification**  
 189. **Indexing**  
 190. **Keywords**  
 191. **Subject Headings**  
 192. **Classification**  
 193. **Indexing**  
 194. **Keywords**  
 195. **Subject Headings**  
 196. **Classification**  
 197. **Indexing**  
 198. **Keywords**  
 199. **Subject Headings**  
 200. **Classification**  
 201. **Indexing**  
 202. **Keywords**  
 203. **Subject Headings**  
 204. **Classification**  
 205. **Indexing**  
 206. **Keywords**  
 207. **Subject Headings**  
 208. **Classification**  
 209. **Indexing**  
 210. **Keywords**  
 211. **Subject Headings**  
 212. **Classification**  
 213. **Indexing**  
 214. **Keywords**  
 215. **Subject Headings**  
 216. **Classification**  
 217. **Indexing**  
 218. **Keywords**  
 219. **Subject Headings**  
 220. **Classification**  
 221. **Indexing**  
 222. **Keywords**  
 223. **Subject Headings**  
 224. **Classification**  
 225. **Indexing**  
 226. **Keywords**  
 227. **Subject Headings**  
 228. **Classification**  
 229. **Indexing**  
 230. **Keywords**  
 231. **Subject Headings**  
 232. **Classification**  
 233. **Indexing**  
 234. **Keywords**  
 235. **Subject Headings**  
 236. **Classification**  
 237. **Indexing**  
 238. **Keywords**  
 239. **Subject Headings**  
 240. **Classification**  
 241. **Indexing**  
 242. **Keywords**  
 243. **Subject Headings**  
 244. **Classification**  
 245. **Indexing**  
 246. **Keywords**  
 247. **Subject Headings**  
 248. **Classification**  
 249. **Indexing**  
 250. **Keywords**  
 251. **Subject Headings**

<400> 6643

<210> 6644

<211> 431

<212> PRT

<213> B.fragilis

<400> 6644

Ser	Lys	Asp	Asn	Met	His	Met	Arg	Gly	Leu	Ile	Val	Ser	Ala	Phe	Leu
1				5					10					15	
Leu	Leu	Gly	Cys	Ile	Gln	Ala	Phe	Gly	Gln	Glu	Asn	Arg	Lys	Glu	Val
			20					25					30		
Cys	Ile	Gly	Phe	Pro	Val	Gly	Asn	Ser	Thr	Leu	Asp	Thr	Ala	Tyr	Gly
		35					40					45			
Asn	Asn	Ala	Ala	Arg	Leu	Ser	Glu	Val	Val	Ser	Phe	Leu	Glu	Ser	Val
		50				55					60				
Lys	Lys	Asp	Ser	Thr	Leu	Glu	Leu	Thr	Gly	Val	Ser	Phe	Cys	Gly	Ser
65					70					75					80
Ala	Ser	Pro	Glu	Gly	Phe	Thr	Val	Asn	Arg	Met	Leu	Ala	Glu	Lys	
				85				90					95		
Arg	Arg	Asn	Ser	Leu	Glu	Arg	Tyr	Val	Arg	Glu	Arg	Val	Ser	Leu	Pro
			100					105					110		
Asp	Gly	Ile	Ile	Ser	Arg	Pro	Glu	Gly	Phe	Ile	Ala	Trp	Glu	Arg	Leu

115 120 125  
 Ala Glu Leu Val Glu Val Ser Asp Met Pro His Lys Glu Glu Ala Val  
 130 135 140  
 Asp Val Leu Arg Asn Val Pro Glu Phe Thr Tyr Gly Asn Lys Gly Val  
 145 150 155 160  
 Leu Val Asp Ser Arg Lys Lys His Leu Met Glu Leu Gln Tyr Gly Arg  
 165 170 175  
 Thr Trp His Tyr Met His Lys His Phe Asp Arg Ile Arg Asn Ala  
 180 185 190  
 Ser Val Ile Leu Val Thr Val Arg Gln Lys Pro Leu Ile Glu Glu Lys  
 195 200 205  
 Thr Val Val Lys Glu Glu Pro Val Val Pro Thr Pro Ala Asp Asp Thr  
 210 215 220  
 Thr Thr Val Val Glu Lys Ala Asp Thr Val Val Ala Val Ser Ser Glu  
 225 230 235 240  
 Thr Ser Lys Pro Phe Tyr Met Ala Leu Lys Thr Asp Met Leu Tyr Asp  
 245 250 255  
 Val Leu Ala Val Pro Asn Ile Gly Val Glu Phe Tyr Leu Gly Lys Asn  
 260 265 270  
 Trp Ser Ile Ser Gly Asn Trp Met Tyr Gly Trp Trp Lys Lys Asn Ser  
 275 280 285  
 Asn His Arg Tyr Trp Arg Val Tyr Gly Gly Asp Leu Ala Val Arg Tyr  
 290 295 300  
 Trp Leu Gly Lys Lys Ala His Glu Lys Pro Leu Thr Gly His His Ile  
 305 310 315 320  
 Gly Ile Tyr Gly Gln Ala Phe Thr Tyr Asp Phe Glu Trp Gly Gly Lys  
 325 330 335  
 Gly Tyr Met Gly Gly Glu Pro Gly Gly Met Leu Trp Asp Lys Thr Asn  
 340 345 350  
 Tyr Ala Ala Gly Val Glu Tyr Gly Tyr Ser Leu Pro Ile Ala Asn Arg  
 355 360 365  
 Leu Asn Ile Asp Phe Thr Leu Gly Val Gly Tyr Trp Gly Gly Lys Tyr  
 370 375 380  
 Tyr Glu Tyr Val Pro Leu Asp Ser His Tyr Val Trp Gln Ala Thr Lys  
 385 390 395 400  
 Asn Arg His Trp Phe Gly Pro Thr Lys Ala Glu Ile Ser Leu Val Trp  
 405 410 415  
 Leu Leu Gly Arg Gly Asn Ser Asn Asn Lys Lys Gly Gly Met Lys  
 420 425 430

&lt;210&gt; 6645

&lt;211&gt; 197

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6645

Tyr Gln Cys Lys Asn Arg Lys Glu Ile Asn Met Thr Ile Arg Glu Phe  
 1 5 10 15  
 Lys Glu His Val Lys Thr Arg Lys Leu Leu Asp Thr Glu Glu Ile His  
 20 25 30  
 Gln Phe Met Asp Ile Met Ser Asn Glu Ala Arg Arg Ile Thr Phe Gln  
 35 40 45  
 Leu Asn Thr Thr Tyr His Thr Pro Asn Glu Val Arg Glu Leu Leu Ser  
 50 55 60  
 Glu Leu Phe Gly Tyr Arg Val Pro Ser Ser Phe Arg Val Phe Pro Pro  
 65 70 75 80  
 Phe Tyr Thr Asp Phe Gly Lys Asn Ile Thr Ile Gly Glu Asp Val Phe  
 85 90 95  
 Ile Asn Ala Cys Cys His Phe Gln Asp His Gly Gly Ile Thr Ile Gly

1978	1979	1980	1981	1982
1983	1984	1985	1986	1987
1988	1989	1990	1991	1992
1993	1994	1995	1996	1997
1998	1999	2000	2001	2002
2003	2004	2005	2006	2007
2008	2009	2010	2011	2012
2013	2014	2015	2016	2017
2018	2019	2020	2021	2022
2023	2024	2025	2026	2027
2028	2029	2030	2031	2032
2033	2034	2035	2036	2037
2038	2039	2040	2041	2042
2043	2044	2045	2046	2047
2048	2049	2050	2051	2052
2053	2054	2055	2056	2057
2058	2059	2060	2061	2062
2063	2064	2065	2066	2067
2068	2069	2070	2071	2072
2073	2074	2075	2076	2077
2078	2079	2080	2081	2082
2083	2084	2085	2086	2087
2088	2089	2090	2091	2092
2093	2094	2095	2096	2097
2098	2099	2100	2101	2102
2103	2104	2105	2106	2107
2108	2109	2110	2111	2112
2113	2114	2115	2116	2117
2118	2119	2120	2121	2122
2123	2124	2125	2126	2127
2128	2129	2130	2131	2132
2133	2134	2135	2136	2137
2138	2139	2140	2141	2142
2143	2144	2145	2146	2147
2148	2149	2150	2151	2152
2153	2154	2155	2156	2157
2158	2159	2160	2161	2162
2163	2164	2165	2166	2167
2168	2169	2170	2171	2172
2173	2174	2175	2176	2177
2178	2179	2180	2181	2182
2183	2184	2185	2186	2187
2188	2189	2190	2191	2192
2193	2194	2195	2196	2197
2198	2199	2200	2201	2202
2203	2204	2205	2206	2207
2208	2209	2210	2211	2212
2213	2214	2215	2216	2217
2218	2219	2220	2221	2222
2223	2224	2225	2226	2227
2228	2229	2230	2231	2232
2233	2234	2235	2236	2237
2238	2239	2240	2241	2242
2243	2244	2245	2246	2247
2248	2249	2250	2251	2252
2253	2254	2255	2256	2257
2258	2259	2260	2261	2262
2263	2264	2265	2266	2267
2268	2269	2270	2271	2272
2273	2274	2275	2276	2277
2278	2279	2280	2281	2282
2283	2284	2285	2286	2287
2288	2289	2290	2291	2292
2293	2294	2295	2296	2297
2298	2299	2300	2301	2302
2303	2304	2305	2306	2307
2308	2309	2310	2311	2312
2313	2314	2315	2316	2317
2318	2319	2320	2321	2322
2323	2324	2325	2326	2327
2328	2329	2330	2331	2332
2333	2334	2335	2336	2337
2338	2339	2340	2341	2342
2343	2344	2345	2346	2347
2348	2349	2350	2351	2352
2353	2354	2355	2356	2357
2358	2359	2360	2361	2362
2363	2364	2365	2366	2367
2368	2369	2370	2371	2372
2373	2374	2375	2376	2377
2378	2379	2380	2381	2382
2383	2384	2385	2386	

<400> 6646

```
<210> 6647
<211> 690
<212> PRT
<213> B.fragilis
```

<400> 6647

Asn	Met	Ile	Lys	Arg	Leu	Phe	Phe	Leu	Leu	Pro	Phe	Ser	Thr	Ile	Val
1				5					10					15	
Ser	Ala	Asn	Glu	Pro	Asp	Thr	Ile	Gln	Val	Lys	Arg	Ile	Asp	Leu	Asp
			20					25					30		
Glu	Val	Thr	Ile	Val	Ala	Phe	Lys	Gln	Asn	Thr	Pro	Asn	Arg	Glu	Pro
		35					40					45			
Leu	Ser	Ile	Ser	Thr	Leu	Asp	Asn	Arg	Phe	Leu	Lys	Glu	Asn	Glu	Ile
	50					55					60				
Ser	Gly	Ala	Lys	Asp	Leu	Ser	Ser	Leu	Leu	Pro	Asn	Phe	Tyr	Met	Pro
65					70					75					80
Asp	Tyr	Gly	Ser	Lys	Gln	Asn	Ser	Pro	Val	Tyr	Ile	Arg	Gly	Ile	Gly
				85					90					95	
Ala	Lys	Lys	Asp	Ala	Pro	Ser	Val	Gly	Phe	Tyr	Val	Asp	Gly	Ile	Pro
			100					105					110		
Tyr	Phe	Glu	Thr	Ser	Ala	Phe	Asp	Ile	Asp	Leu	Ser	Asp	Ile	Ser	Ser
		115					120					125			
Ile	Glu	Val	Leu	Arg	Gly	Pro	Gln	Gly	Thr	Leu	Tyr	Gly	Arg	Asn	Ser
	130					135					140				
Ile	Gly	Gly	Thr	Ile	Asn	Val	Tyr	Thr	His	Ser	Pro	Leu	Asp	Tyr	Gln
145					150					155					160

Gly	Thr	Tyr	Phe	Arg	Leu	Gly	Tyr	Gly	Ser	Tyr	Asn	Asp	Met	Arg	Leu
				165					170					175	
Ile	Ala	Ser	Asn	Tyr	Thr	Lys	Val	Asn	Glu	Gln	Leu	Gly	Leu	Ser	Phe
			180					185					190		
Ser	Gly	Asn	Tyr	His	His	Asn	Asp	Gly	Phe	Phe	Thr	Asn	Leu	His	Thr
		195					200					205			
His	Lys	Lys	Ala	Asp	Lys	Leu	Asp	Asn	Gly	Ala	Gly	Arg	Ile	Gly	Leu
	210					215					220				
Thr	Trp	Lys	Pro	Ala	Ala	His	Trp	Thr	Thr	Arg	Phe	Ile	Thr	Ser	Tyr
	225					230				235					240
Glu	Tyr	Ser	Asn	Gln	Gly	Gly	Tyr	Pro	Tyr	Gly	Leu	Tyr	Asn	Ala	Asp
			245						250					255	
Lys	Gly	Thr	Thr	Glu	Ala	Val	Asn	Tyr	Asn	Asn	Glu	Gly	Leu	Tyr	Arg
			260					265					270		
Arg	Asn	Leu	Leu	Thr	Ser	Gly	Ile	Asn	Ile	Arg	Tyr	Asn	Gly	Pro	His
		275					280					285			
Ile	Ser	Phe	Asn	Ser	Gln	Thr	Ser	Tyr	Gln	Tyr	Ile	Gln	Asp	Lys	Met
	290					295					300				
Gly	Ile	Asp	Gln	Asp	Phe	Ser	Pro	Arg	Asn	Ile	Phe	Tyr	Gly	Gln	Asn
	305				310				315						320
Lys	Ile	Arg	Gln	His	Met	Tyr	Cys	Gln	Glu	Phe	Thr	Ile	Lys	Ser	Val
			325					330						335	
Asn	Lys	Ser	Arg	Tyr	His	Trp	Ile	Thr	Gly	Ala	Phe	Val	Phe	Arg	Gln
		340						345					350		
Thr	Ile	Asn	Arg	Lys	Val	Asp	Leu	Ser	Arg	Phe	Thr	Asp	Thr	Thr	Arg
		355					360					365			
His	Leu	Thr	Asn	Ser	Gly	Ile	Pro	Thr	Gln	Gly	Ile	Ala	Phe	Tyr	His
	370					375					380				
Gln	Ser	Thr	Leu	Asp	Leu	Leu	Gln	Gly	Leu	Ser	Cys	Ser	Val	Gly	Leu
	385				390					395					400
Arg	Tyr	Asp	Tyr	Glu	His	Ala	Arg	Cys	Asp	Phe	Ser	Lys	Val	Gln	Gln
			405						410					415	
Pro	Leu	Asn	Gly	Asn	Gly	Glu	Thr	Lys	Ser	Leu	Glu	Gln	Phe	Asn	Arg
		420						425					430		
Ser	Leu	His	Phe	Gly	Gln	Phe	Thr	Pro	Arg	Phe	Ser	Met	Gln	Tyr	Leu
	435					440						445			
Ser	Ser	His	Asn	Gln	Leu	Phe	Tyr	Ala	Ser	Val	Ser	Lys	Gly	Tyr	Lys
	450					455					460				
Ala	Gly	Gly	Phe	Asn	Val	Ser	Phe	Leu	Asn	Asn	Asp	Asp	Tyr	Leu	Tyr
	465				470					475					480
Ser	Pro	Glu	Tyr	Asn	Trp	Asn	Tyr	Glu	Ile	Gly	Thr	Lys	Leu	Ser	Phe
			485					490						495	
Leu	Asn	Asn	Arg	Leu	Ser	Ala	Asp	Leu	Ser	Leu	Phe	Tyr	Ile	Asp	Trp
			500					505					510		
Arg	Asn	Gln	Gln	Ile	Thr	Asn	Thr	Ile	Pro	Thr	Val	Gly	Asn	Val	Ile
		515					520					525			
Arg	Asn	Ala	Gly	Arg	Ser	Arg	Asn	Lys	Gly	Ile	Glu	Ala	Ser	Phe	Gln
	530					535					540				
Ala	Arg	Pro	Thr	Lys	Ser	Trp	Met	Met	Tyr	Met	Asn	Tyr	Gly	Tyr	Thr
	545				550					555					560
Asp	Ala	Arg	Phe	Val	His	Tyr	Gln	Lys	Glu	Glu	Arg	Gly	Ile	Leu	Lys
			565						570					575	
Asp	Tyr	Glu	Gly	Asn	Tyr	Leu	Pro	Met	Val	Pro	Arg	His	Thr	Phe	Ser
		580						585					590		
Leu	Thr	Thr	Gly	Tyr	Ser	Phe	Tyr	Asp	Ile	Cys	Ser	Trp	Ile	Asp	Arg
		595					600					605			
Leu	Thr	Leu	Asn	Ala	Gly	Val	Ser	Val	Thr	Gly	Pro	Ile	Tyr	Trp	Tyr
	610					615					620				
Glu	Asp	Asn	His	Pro	Ser	Gln	Ser	Pro	Tyr	Ala	Leu	Val	Asn	Leu	Arg

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65  
66  
67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82  
83  
84  
85  
86  
87  
88  
89  
90  
91  
92  
93  
94  
95  
96  
97  
98  
99  
100

625 630 635 640  
 Ile Ser Ile Asn Lys Gly Cys Phe Thr Trp Glu Ala Trp Ser Lys Asn  
 645 650 655  
 Leu Thr Asn Thr Asp Tyr Leu Ser Tyr Tyr Phe Val Thr Ser Lys Ala  
 660 665 670  
 Tyr Ala Gln Lys Gly Lys Pro Ile Thr Leu Gly Thr Ser Val Ser Ile  
 675 680 685  
 Ser Leu  
 690

<210> 6648  
 <211> 83  
 <212> PRT  
 <213> B.fragilis

<400> 6648  
 Tyr Pro Thr Asn Thr Tyr Ile Tyr Ile Lys Lys Asn Thr Ile Tyr Met  
 1 5 10 15  
 Tyr Gln Thr Ile Ser Glu Tyr Glu Ser Leu Gln Pro Val Thr Tyr Gln  
 20 25 30  
 Ile Asp Thr Asn Arg Phe Glu Lys Asn Gln Ile Lys Asp Ser Ala Lys  
 35 40 45  
 Glu Gln Tyr Lys Ser Val Thr Asn Leu Tyr Leu Pro Arg Asn Asp Lys  
 50 55 60  
 Asn Cys Ile Cys Thr Ser Val Pro Asn Val Asn Thr Gln Glu Ala Lys  
 65 70 75 80  
 Pro Gly Arg

<210> 6649  
 <211> 231  
 <212> PRT  
 <213> B.fragilis

<400> 6649  
 Leu Tyr Lys Lys Ser Leu Ile Met Lys Lys Ile Lys Phe Met Ala Leu  
 1 5 10 15  
 Phe Leu Ser Met Ala Leu Val Phe Gly Ser Cys Gly Ser Met Asn Asn  
 20 25 30  
 Thr Ala Lys Gly Gly Val Ile Gly Gly Ser Gly Ala Ala Leu Gly  
 35 40 45  
 Ala Ile Ile Gly Gly Ile Ala Gly Lys Gly Lys Gly Ala Ala Ile Gly  
 50 55 60  
 Ala Ala Val Gly Thr Ala Val Gly Ala Gly Ala Gly Val Leu Ile Gly  
 65 70 75 80  
 Arg Lys Met Asp Lys Lys Ala Ala Glu Ala Ala Lys Ile Lys Asp Ala  
 85 90 95  
 Gln Val Glu Gln Val Thr Asp Asn Asn Gly Leu Ala Ala Val Lys Val  
 100 105 110  
 Thr Phe Pro Ser Gly Ile Leu Phe Ala Phe Asn Ser Ser Ala Leu Ser  
 115 120 125  
 Ala Ala Ser Lys Gln Ser Leu Ala Glu Phe Ala Asn Ile Leu Lys Glu  
 130 135 140  
 Asp Pro Thr Val Asp Val Ala Ile Ile Gly His Thr Asp Lys Val Gly  
 145 150 155 160  
 Ser Tyr Glu Ala Asn Gln Lys Val Ser Ala Asn Arg Ala Tyr Ala Val  
 165 170 175  
 Glu Asn Tyr Leu Gln Ala Cys Gly Val Lys Pro Tyr Gln Phe Lys Lys  
 180 185 190

Val	Glu	Gly	Val	Gly	Tyr	Ser	Gln	Tyr	Asn	Glu	Ser	Glu	Thr	Pro	Glu
		195					200					205			
Gln	Asn	Arg	Arg	Val	Glu	Ile	Phe	Met	Tyr	Ala	Ser	Glu	Gln	Met	Ile
		210				215					220				
Lys	Asn	Ala	Glu	Ala	Gly	Lys									
225					230										

&lt;210&gt; 6650

&lt;211&gt; 424

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6650

Thr	Leu	Lys	Lys	Met	Lys	Thr	Gln	Trp	Ile	Arg	Ser	Ile	Gly	Cys	Ile
1				5					10					15	
Leu	Ala	Val	Leu	Ile	Leu	Ser	Gly	Ile	Met	Pro	Leu	Ala	Ala	Gln	Asp
			20					25					30		
Asn	Ala	Glu	Arg	Tyr	Thr	Thr	Ile	Ser	Gly	Val	Val	Lys	Asp	Lys	Leu
			35				40					45			
Asn	Lys	Lys	Lys	Leu	Glu	Tyr	Val	Asn	Val	Ser	Ile	Pro	Gly	Ser	Ser
			50			55				60					
Val	Gly	Thr	Val	Thr	Asn	Ala	Asp	Gly	Glu	Phe	Thr	Leu	Lys	Ile	Pro
65					70				75						80
Glu	Ser	Val	Gln	Ala	Lys	Asp	Ile	Glu	Ala	Ser	His	Val	Gly	Tyr	Leu
			85					90						95	
Asn	Ser	Arg	Ile	Pro	Leu	Lys	Glu	Glu	Asn	Pro	Thr	Glu	Arg	Ile	Val
			100					105					110		
Trp	Leu	Thr	Pro	Tyr	Ala	Asn	Leu	Leu	Ser	Glu	Ile	Leu	Val	Arg	Ala
			115				120					125			
Arg	Asp	Pro	Arg	Ser	Ile	Val	Glu	Glu	Ala	Leu	Arg	Lys	Ile	Pro	Ala
			130			135					140				
Asn	Tyr	Ser	Pro	Gln	Ser	Asn	Met	Leu	Thr	Gly	Phe	Tyr	Arg	Glu	Leu
145					150					155					160
Ala	Gln	Lys	Gly	Arg	Arg	Tyr	Ile	Asn	Ile	Ser	Glu	Ala	Val	Ile	Asp
			165						170					175	
Ile	Tyr	Lys	Thr	Pro	Tyr	Asn	Glu	Thr	Ala	Glu	His	Asp	Arg	Val	Gln
			180					185					190		
Ile	Tyr	Arg	Gly	Arg	Arg	Leu	Leu	Ser	Gln	Lys	Gln	Ser	Asp	Thr	Leu
		195				200						205			
Ala	Val	Lys	Leu	Leu	Gly	Gly	Pro	Asn	Met	Ala	Ile	Tyr	Met	Asp	Ile
			210			215					220				
Val	Lys	Asn	Pro	Asp	Cys	Leu	Leu	Ala	Gln	Glu	Asp	Leu	Leu	Phe	Tyr
225					230					235					240
Glu	Phe	Arg	Met	Glu	Asp	Pro	Thr	Ser	Ile	Asp	Asp	Arg	Ser	Gln	Tyr
			245						250					255	
Val	Ile	Ser	Phe	Arg	Pro	Arg	Val	Lys	Leu	Ser	Tyr	Pro	Leu	Cys	Tyr
			260					265					270		
Gly	Thr	Leu	Tyr	Ile	Asp	Lys	Glu	Arg	Leu	Ser	Phe	Thr	Arg	Ala	Glu
			275				280					285			
Phe	Asn	Leu	Ser	Met	Asp	Asp	Lys	Asn	Lys	Ala	Thr	Gln	Ala	Ile	Leu
			290			295					300				
Arg	Lys	Lys	Pro	Phe	Gly	Leu	Arg	Phe	Lys	Pro	Val	Glu	Val	Ser	Tyr
305					310					315					320
Leu	Ile	Ser	Tyr	Lys	Asn	Leu	Glu	Gly	Ile	Thr	Tyr	Leu	Ser	Tyr	Ile
			325						330					335	
Arg	Asn	Asn	Ile	Arg	Phe	Lys	Cys	Asp	Trp	Lys	Arg	Lys	Leu	Phe	Ser
			340					345					350		
Thr	Asn	Tyr	Thr	Ile	Leu	Ser	Glu	Met	Val	Val	Thr	Asp	Arg	Lys	Glu
			355				360					365			

1  
 2  
 3  
 4  
 5  
 6  
 7  
 8  
 9  
 10  
 11  
 12  
 13  
 14  
 15  
 16  
 17  
 18  
 19  
 20  
 21  
 22  
 23  
 24  
 25  
 26  
 27  
 28  
 29  
 30  
 31  
 32  
 33  
 34  
 35  
 36  
 37  
 38  
 39  
 40  
 41  
 42  
 43  
 44  
 45  
 46  
 47  
 48  
 49  
 50  
 51  
 52  
 53  
 54  
 55  
 56  
 57  
 58  
 59  
 60  
 61  
 62  
 63  
 64  
 65  
 66  
 67  
 68  
 69  
 70  
 71  
 72  
 73  
 74  
 75  
 76  
 77  
 78  
 79  
 80  
 81  
 82  
 83  
 84  
 85  
 86  
 87  
 88  
 89  
 90  
 91  
 92  
 93  
 94  
 95  
 96  
 97  
 98  
 99  
 100



Asn Asn Ile Thr Ala Ile Pro Tyr Lys Ala Ala Phe Lys Gln Asn His  
 370 375 380  
 Val Phe Ser Asp Lys Val Asp Asn Phe Thr Ser Asp Asn Phe Trp Gly  
 385 390 395 400  
 Gly Tyr Asn Ile Ile Glu Pro Thr Glu Ser Leu Glu His Ala Val Asn  
 405 410 415  
 Lys Leu Lys Lys Gln Gln Lys Gln  
 420

<210> 6651  
 <211> 316  
 <212> PRT  
 <213> B.fragilis

<400> 6651

Gln Val Met Asn Glu Thr Ile Arg Arg Ile Leu Ala Glu Ser Gly Thr  
 1 5 10 15  
 Lys Thr Ser Lys Ile Arg Lys Leu Leu Leu Thr Gly Leu Ser His Arg  
 20 25 30  
 Glu Ile Ala Asp Leu Val Thr Arg Gly Asn Arg Gly Phe Val Trp Asn  
 35 40 45  
 Val Tyr Lys Arg Met Arg Asp Glu Gly Leu Leu Pro Ala Ser Gln Thr  
 50 55 60  
 Ala Thr Val Leu Arg Pro Glu Pro Asp Tyr Thr Phe Asn Arg Cys Phe  
 65 70 75 80  
 Gly Val Glu Ile Glu Ala Tyr Asn Cys Pro Arg Gln Thr Leu Thr Asp  
 85 90 95  
 Ala Leu Arg Glu Thr Gly Ile Pro Val Glu Ile Gly Ser Arg Asn Ala  
 100 105 110  
 Glu Thr Asn Ser Asn Trp Lys Leu Thr Thr Asp Gly Ser Leu Glu Gly  
 115 120 125  
 Ser His Thr Phe Glu Leu Val Ser Pro Ile Leu Cys Gly Glu Gln Gly  
 130 135 140  
 Leu Glu Val Leu Glu Arg Val Cys Trp Val Leu Asp Ala Tyr Asn Val  
 145 150 155 160  
 Lys Ile Asn Ser Ser Cys Gly Val His Val His Phe Asn Ala Gly Asp  
 165 170 175  
 Phe Asn Leu Thr Thr Trp Gln Asn Leu Ile Leu Ser Tyr Lys His Ala  
 180 185 190  
 Glu Thr Glu Ile Asp Lys Phe Met Pro Ala Ser Arg Arg Gly Asn Arg  
 195 200 205  
 Asn Thr Tyr Cys Arg Ser Leu Arg Ala Phe Ser Asp Glu Asp Ile Arg  
 210 215 220  
 Ser Ala Glu Ser Ile Glu Ser Leu Gln Arg Leu Phe Gly Ser Arg Tyr  
 225 230 235 240  
 Met Lys Val Asn Leu Glu Ala Tyr Ser Arg His Arg Thr Val Glu Phe  
 245 250 255  
 Arg Gln His Ser Gly Thr Ile Asn Phe Thr Lys Ile Glu Asn Trp Val  
 260 265 270  
 Arg Phe Leu Gly Arg Leu Ile Ile Phe Ala Ser Thr Ser Ser Leu Pro  
 275 280 285  
 Ala Gly Ile Arg Leu Glu Asp Phe Pro Phe Leu Glu Glu Lys Gln Lys  
 290 295 300  
 Leu Tyr Tyr Lys Leu Arg Thr Lys Lys Leu Met Glu  
 305 310 315

<210> 6652  
 <211> 401  
 <212> PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6652

```

Asn Asn Met Asn Phe Asn Glu Ile Lys Asn Arg Leu Leu Ile Gly Ala
1      5      10      15
Leu Ala Ile Thr Val Phe Pro Phe Tyr Val His Ala Gln Asn Asp Lys
      20      25      30
Met Glu Gly Gln Thr Ala His Arg Thr Lys Ala Trp Glu Ile Gly Val
      35      40      45
Gly Gly Ala Leu Ile Asn Trp Asp Arg Val Thr Phe Ser Asn Phe Arg
      50      55      60
Gln Val Asp Gly Asn Tyr Leu Tyr Arg Met Asn Ile Asp His Leu Phe
65      70      75      80
Gly Gly Ile Gln Leu Tyr Ala Ala Arg Glu Leu Asn Pro Trp Phe Tyr
      85      90      95
Leu Asp Leu Gln Gly Thr Leu Gly Leu Ala Arg Lys Gln Val Glu Thr
      100     105     110
Gly Gly Arg Lys Phe Asp Phe Met Tyr Met Ala Gly Pro Gly Leu Gln
      115     120     125
Phe Arg Leu Thr Pro Leu Phe Lys Ser Lys Tyr Val Glu Pro Tyr Leu
      130     135     140
Arg Val Gly Val Asn Tyr Leu His His Asp Phe Tyr Ala Ile Asn Ala
145     150     155     160
Gly Lys Phe Glu Asn Asp Pro Ile Gly Glu Ala Glu Trp Thr Ser Ser
      165     170     175
Asn Pro Trp Asn Lys Glu Lys Ile Gly Ser Lys Gln Ser Tyr Phe Pro
      180     185     190
Leu Ser Phe Gly Ala Gly Val Gln Ala Trp Leu Asn Asp His Trp Gly
      195     200     205
Val Gly Leu Gln Gly Glu Tyr Ile Met Pro Val Asp Lys Lys Gln Thr
210     215     220
Arg Phe Val Gln Ala Ser Met Arg Ile Met Phe Arg Leu Gly Gly Ser
225     230     235     240
Thr Lys Arg Pro Met Pro Val Val Gln Tyr Ile Asp Arg Pro Val Asp
      245     250     255
Arg Ile Val Glu Arg Ile Val Glu Lys Arg Ile Glu Val Pro Ala Val
      260     265     270
Val Glu Ser His Val Cys Asp Leu Phe Asp Asn Ile His Phe Ala Phe
275     280     285
Asp Lys Asp Val Ile Thr Ser Glu Ser Glu Ile Thr Leu Asp Lys Ile
290     295     300
Ala Asp Leu Leu Lys Ser Tyr Pro Asp Asn Asn Phe Leu Ile Thr Gly
305     310     315     320
Tyr Thr Asp Ala Arg Gly Ser Asp Asn Tyr Asn Ile Asp Leu Ser Lys
      325     330     335
Arg Arg Ala Lys Ala Val Tyr Ser Ala Leu Leu Lys Arg Gln Val Pro
      340     345     350
Gln His Met Leu Lys Trp Arg Gly Val Gly Tyr His Ala Ser Ser Val
      355     360     365
Pro Ala Ser Gly Pro Asp Lys Val Arg Met Gly Asp Arg Lys Val Ser
370     375     380
Ile Glu Arg Val Thr Asn Ser Asp Tyr Trp Gly Trp Leu Thr Asn Glu
385     390     395     400
Glu

```

&lt;210&gt; 6653

&lt;211&gt; 301

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6653

Lys Asn Met Lys Thr Thr Gln Arg Thr Ala Gly Trp Tyr His Val Met  
 1 5 10 15  
 Ala Ala Val Thr Val Met Ile Trp Gly Thr Thr Phe Val Ala Thr Lys  
 20 25 30  
 Val Leu Ile Lys Tyr Gly Leu Ser Pro Val Asp Ile Leu Phe Tyr Arg  
 35 40 45  
 Phe Leu Leu Ala Tyr Ile Cys Ile Trp Phe Phe Ser Pro Arg Val Leu  
 50 55 60  
 Leu Ala Lys Ser Trp Gln Asp Glu Leu Arg Phe Val Gly Leu Gly Leu  
 65 70 75 80  
 Cys Gly Gly Ser Leu Tyr Phe Val Ala Glu Asn Thr Ala Leu Gly Met  
 85 90 95  
 Thr Leu Ala Ser Asn Val Ser Leu Ile Ile Cys Thr Thr Pro Ile Leu  
 100 105 110  
 Thr Ala Leu Leu Ala Pro Phe Phe Tyr Lys Gly Asp Lys Leu Lys Ala  
 115 120 125  
 Arg Leu Ile Gly Gly Ser Leu Met Ala Leu Ile Gly Val Gly Leu Val  
 130 135 140  
 Val Phe Asn Gly Ser Phe Ile Leu Gln Leu Ser Pro Ala Gly Asp Ile  
 145 150 155 160  
 Leu Thr Leu Ile Ala Ala Leu Met Trp Ala Phe Tyr Cys Leu Leu Leu  
 165 170 175  
 Arg Arg Met Asn Thr His Tyr Pro Thr Leu Phe Ile Thr Arg Lys Val  
 180 185 190  
 Phe Phe Tyr Gly Leu Val Thr Leu Leu Pro Leu Phe Leu Val Tyr Pro  
 195 200 205  
 Leu Gln Thr Asp Ile His Ile Leu Phe Arg Pro Val Val Ala Leu Asn  
 210 215 220  
 Leu Leu Phe Leu Gly Val Ile Ala Ser Met Leu Cys Tyr Ile Met Trp  
 225 230 235 240  
 Asn Thr Ala Val Lys Gln Leu Gly Val Val Cys Ala Thr Ser Tyr Ile  
 245 250 255  
 Tyr Val Val Pro Leu Ile Thr Leu Leu Thr Ser Ala Ile Val Ile Asp  
 260 265 270  
 Glu Thr Ile Thr Ile Val Ala Leu Leu Gly Ser Ala Leu Ile Leu Ser  
 275 280 285  
 Gly Val Tyr Ile Ala Glu Arg Gly Val Asn Leu Lys Lys  
 290 295 300

&lt;210&gt; 6654

&lt;211&gt; 77

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6654

Leu Thr Met Asn Lys Val Val Tyr Val His Leu Val Phe Glu Lys Lys  
 1 5 10 15  
 Asp Tyr Phe Phe Gly Ser Ile Ala Ala Ile Tyr Asp Tyr Leu Ser Ala  
 20 25 30  
 Asp Gln Ile Gly Ala Gly Tyr Asn Thr Leu Arg Asn Val Arg Trp Lys  
 35 40 45  
 Glu Thr Ser Val Tyr Val Thr Pro Lys Ala Ile Ile Lys Ile Gly Lys  
 50 55 60  
 Leu Leu Arg Ala Gly Ser Cys Lys Lys Gln Pro Ile Lys  
 65 70 75

<210> 6655  
 <211> 186  
 <212> PRT  
 <213> B.fragilis

<400> 6655

Ser Val Thr Lys Met Asn Thr Asn Lys Glu Phe Leu Thr Lys Met Ile  
 1 5 10 15  
 Arg Val Ser Pro Ser Val Lys Lys Arg Met Glu Ile Phe Gln Gly Gly  
 20 25 30  
 Asp Ser Ala Asn Ser Cys Ile Asp Arg Met Ile Thr Phe Phe Glu Ile  
 35 40 45  
 Thr Gly Phe Asn Pro Arg Tyr Ala Ser Arg Asn Pro Thr Ala Leu Val  
 50 55 60  
 Glu Lys Arg Ile Glu Asp Val Val Arg Ile Ile Lys Ser Gln Glu Arg  
 65 70 75 80  
 Asp Ile Leu Lys Pro Val Leu Glu Lys Leu Ser Ala Ile Asn Asn Thr  
 85 90 95  
 Pro Gln Glu Ser Pro Asp Tyr Ala Arg Leu Met Asn Glu Leu Arg Asp  
 100 105 110  
 Leu Lys Asp Glu Asn Arg Lys Leu Lys Glu Arg Leu Gln Ala Asp Asp  
 115 120 125  
 Leu His Thr Gln Asp Ala Ala Val Tyr Gln Asp Lys Leu Lys Arg Leu  
 130 135 140  
 Gly Gly Leu Leu Lys Tyr Gln Leu Asp Pro Glu Lys Phe Pro Arg Ile  
 145 150 155 160  
 Lys Tyr Ser Asp Asp Val Arg Val Pro Val Asn Thr Leu Gln Leu Leu  
 165 170 175  
 Ile Lys Lys Ile Asn Glu Glu Tyr Val Leu  
 180 185

<210> 6656  
 <211> 152  
 <212> PRT  
 <213> B.fragilis

<400> 6656

Arg Lys Thr Lys Pro Gly Lys Lys Lys Arg Gly Ala Ser Thr Ile Ser  
 1 5 10 15  
 Gln Gln Thr Ala Lys Asn Val Phe Leu Trp Pro Gln Ser Ser Trp Ile  
 20 25 30  
 Arg Lys Gly Phe Glu Val Tyr Phe Thr Phe Leu Ile Glu Thr Cys Trp  
 35 40 45  
 Ser Lys Glu Arg Ile Met Glu Val Tyr Leu Asn Ser Ile Glu Met Gly  
 50 55 60  
 Lys Gly Ile Tyr Gly Ala Gln Ala Thr Ala Lys Tyr Lys Phe Lys Thr  
 65 70 75 80  
 Thr Ala Ala Lys Leu Thr Arg Gly Gln Cys Ala Leu Ile Ala Ala Thr  
 85 90 95  
 Leu Pro Asn Pro Ile Arg Phe Asp Ser Ala His Pro Ser Pro Tyr Ile  
 100 105 110  
 Lys Arg Arg Gln Gly Gln Ile Leu Arg Leu Met Asn Leu Val Pro Lys  
 115 120 125  
 Phe Pro Pro Val Asp Lys Glu Lys Ala Lys Gly Gln Asp Thr Lys Lys  
 130 135 140  
 Gln Lys Asn Lys Lys Lys Lys Lys  
 145 150

<210> 6657

<211> 204  
 <212> PRT  
 <213> B.fragilis

<400> 6657

Leu Ile Lys Asn Thr Ile Asp Ser Pro Asn Asn Asp Arg Ser Ile Met  
 1 5 10 15  
 Tyr Lys Ile Ile Phe Val Phe Leu Ala Ile Met Gly Ile Ala Thr Ala  
 20 25 30  
 Ser Cys Ala Gln Gln Lys Gln Gly Ala Asn Arg Lys Gln Pro Asn Asn  
 35 40 45  
 Lys Val Leu Ile Ala Tyr Phe Ser Ala Thr Gly Thr Thr Ala Gly Ala  
 50 55 60  
 Ala Glu Lys Leu Ser Lys Val Thr Gly Gly Glu Leu Tyr Glu Ile Thr  
 65 70 75 80  
 Pro Ala Gln Pro Tyr Thr Asn Ala Asp Leu Asn Trp Asn Asn Lys Gln  
 85 90 95  
 Ser Arg Ser Ser Leu Glu Met Asn Asp Pro Lys Ser Arg Pro Ala Ile  
 100 105 110  
 Arg Lys Ser Ser Ile Asp Ile Ala Asp Tyr Asp Val Ile Phe Val Gly  
 115 120 125  
 Tyr Pro Ile Trp Trp Asn Leu Ala Pro Arg Ile Ile Asn Thr Phe Ile  
 130 135 140  
 Glu Ser Tyr His Leu Lys Asn Lys Thr Ile Ile Leu Phe Ala Thr Ser  
 145 150 155 160  
 Gly Ser Ser Ser Ile Thr Asn Ser Met Ala Thr Leu Lys Lys Ser Tyr  
 165 170 175  
 Pro Glu Leu Ile Trp Lys Glu Gly Lys Leu Leu Asn Gly Met Asn Glu  
 180 185 190  
 Asn Asp Ile Arg Glu Trp Ile Ser Lys Leu Asp Tyr  
 195 200

<210> 6658  
 <211> 92  
 <212> PRT  
 <213> B.fragilis

<400> 6658

Leu Ser Trp Asn Asn Ser Asn Ser Ala Trp Pro Leu Leu Tyr Lys Lys  
 1 5 10 15  
 Glu His Gln Arg Pro Ile Thr Ala Lys Tyr Thr Gly Leu His Cys Ile  
 20 25 30  
 Lys Ser Lys Gln Pro Thr Ile Tyr Lys Asn Glu Leu Tyr Lys Ser Val  
 35 40 45  
 Gln Ser Ile Val Lys Lys Ser Phe Glu Thr Leu Ser Phe Ile Leu Cys  
 50 55 60  
 Glu Ile Cys Ser Asp Lys His Glu Ile Ile Leu Asn His Leu Tyr Ala  
 65 70 75 80  
 Leu Tyr Ile Leu Ser Leu Pro Ile Val Ile Phe Met  
 85 90

<210> 6659  
 <211> 105  
 <212> PRT  
 <213> B.fragilis

<400> 6659

Ile Pro Asn Leu Leu Gly Val Gly Met Gly Phe Ile Gln Val Tyr Asn  
 1 5 10 15

Gly Asn Leu Lys Tyr Val Ala Thr Lys Asp Arg Lys Glu Val Asn Met  
 20 25 30  
 Ala Gly Lys Asn Ile His Val Val His Asn Gly Asp Gln Trp Lys Val  
 35 40 45  
 Lys Gln Glu Asn Ala Gln Arg Ser Ser Gly Asn Phe Arg Thr Gln Gln  
 50 55 60  
 Glu Ala Phe Glu Arg Ala Arg Glu Ile Ala Ile Lys Asn Gly Gln Glu  
 65 70 75 80  
 Val Ala Ile His Gly Leu Asp Gly Arg Ile Arg Glu Lys His Ser Tyr  
 85 90 95  
 Gly Asn Asp Pro Tyr Pro Pro Glu Gly  
 100 105

<210> 6660  
 <211> 206  
 <212> PRT  
 <213> B.fragilis

<400> 6660  
 Ile Glu Thr Glu Ser His Thr Phe Gly Ser Ser Leu Ile Thr Leu Arg  
 1 5 10 15  
 Ile Lys Arg Ile Met Asn Leu Leu Ile Ile Leu Gly Ile Ile Ile  
 20 25 30  
 Leu Val Ile Ile Ala Ser Met Tyr Asn Ser Leu Val Lys Leu Arg  
 35 40 45  
 Asn Asn Arg Glu Asn Ala Phe Ala Asp Ile Asp Val Gln Leu Lys Gln  
 50 55 60  
 Arg His Asp Leu Ile Pro Gln Leu Val Asp Thr Val Lys Gly Tyr Ala  
 65 70 75 80  
 Ala His Glu Lys Glu Thr Leu Glu Arg Val Ile Gln Ala Arg Asn Gly  
 85 90 95  
 Ala Val Ser Ala Arg Thr Ile Asp Glu Lys Ile Thr Ala Glu Asn Gln  
 100 105 110  
 Leu Ser Ser Ala Leu Ala Gly Leu Lys Ile Thr Leu Glu Ala Tyr Pro  
 115 120 125  
 Asp Leu Lys Ala Asn Gln Asn Phe Leu Gln Leu Gln Glu Glu Ile Ser  
 130 135 140  
 Asp Val Glu Asn Lys Leu Ala Ala Val Arg Arg Tyr Phe Asn Ser Ala  
 145 150 155 160  
 Thr Lys Glu Leu Asn Asn Ala Val Gln Thr Phe Pro Ser Asn Leu Ile  
 165 170 175  
 Ala Asn Met Phe Gly Phe His Lys Glu Met Met Phe Asp Leu Gly Thr  
 180 185 190  
 Glu Gln Arg Ala Asn Leu Glu Glu Ala Pro Lys Ile Lys Phe  
 195 200 205

<210> 6661  
 <211> 436  
 <212> PRT  
 <213> B.fragilis

<400> 6661  
 Val Arg Ala Glu Ser Gly Ser Thr Leu Glu Glu Arg Lys Asn Gln Val  
 1 5 10 15  
 Val Arg Phe Arg Arg Asp Arg Pro Gly Gly Gly Ala Thr Ala Gly Arg  
 20 25 30  
 Cys His Arg Gly Glu Gly His Arg Asp Phe Arg Arg Arg Gly Tyr Gly  
 35 40 45  
 Arg Arg Leu Arg Leu Arg Arg Gly Cys Gly Arg Leu Gly Arg Leu Arg

50	55	60
Gly His Arg Thr Ser Ser	Leu Ile Cys Ile Glu Ser Tyr Gln Asn Ile	
65	70	75
Phe Ile His Asn Leu Ile	Phe Asn Gln Met Lys Lys Ile Phe Leu Ile	80
	85	90
Gly Leu Ala Ala Thr Ala Met Leu Ala Ser Cys Ser Asn Asp Glu Thr		95
	100	105
Val Glu Met Ala Gln Ser Lys Ala Ile Gly Phe Ser Asn Ala Phe Val		110
	115	120
Asn Asn Gly Thr Arg Ser Ile Val Asp Pro Ser Phe Thr Ser Thr Ser		125
	130	135
Leu Glu Asp Phe Ala Val Tyr Gly Phe Thr Arg Ala Gly Gln Ile Phe		140
145	150	155
Lys Gly Asp Lys Val Tyr Lys Glu Ser Leu Glu Ser Thr Pro Gln Trp		160
	165	170
Ser Tyr Asp Val Leu Gln Tyr Trp Val Pro Asp Asn Thr Tyr Thr Phe		175
	180	185
Gly Ala Ile Ala Pro Tyr Ser Val Ala Thr Asn Val Phe Asp Val Ala		190
	195	200
Leu Pro Glu Asn Ala Thr Lys Val Glu Met Lys Val Ala Phe Thr Asn		205
	210	215
Thr Asp Ala Asp Gln Val Asp Leu Leu His Ala Ala Pro Thr Gln Ile		220
225	230	235
Ala Gly Thr Glu Val Thr Glu Thr Tyr Ala Thr Pro Val Ser Met Thr		240
	245	250
Phe Asp His Gln Leu Ser Lys Val Lys Phe Ser Phe Glu Asn Ala Val		255
	260	265
Gly Glu Gly Tyr Asn Val Lys Val Ser Asn Val Arg Ile Thr Asp Ala		270
	275	280
Tyr Thr Lys Gly Thr Leu Thr Val Thr Ala Ala Gly Asn Ile Trp Ser		285
	290	295
Ala Gln Ala Asp Asn Asn Leu Ile Leu Asn Phe Gly Asn Val Val Ala		300
305	310	315
Asn Asp Ala Thr Ala Asp Glu Ala Ala Val Ile Ala Asn Ala Thr Thr		320
	325	330
Ser Glu Ser Tyr Asn Glu Lys Leu Met Ile Pro Met Ala Ala Thr Ala		335
	340	345
Thr Tyr Thr Val Thr Phe Thr Ala Glu Leu Tyr His Gly Asp Val Leu		350
	355	360
Leu Gly Ser Tyr Asn His Glu Val Thr Ile Lys Asn Val Glu Phe Lys		365
	370	375
Leu Gly Tyr Cys Tyr Asp Phe Lys Ala Thr Leu Thr Ser Ser Asn Ile		380
385	390	395
Thr Asp Lys Pro Leu Asn Pro Ile Lys Phe Glu Val Asp Asn Ile Thr		400
	405	410
Asp Trp Asn Lys Thr Asp Ile Asp Lys Asp Leu Ala Val Pro Thr Thr		415
	420	425
Gln Ser Gly Asn		430
	435	

&lt;210&gt; 6662

&lt;211&gt; 73

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6662

Gly Gln Gln Asp Asn Phe Phe Leu Tyr Thr Phe Val Tyr Ala Lys Tyr
1 5 10 15
Lys Met Tyr Thr Tyr Asn Arg Leu Ile Ile Asn Ala Met Arg Arg Phe

		20						25				30					
Met	Phe	Pro	Cys	Ala	Gly	Thr	Pro	Leu	Ala	Leu	Pro	Tyr	Gln	Glu	Phe		
		35						40				45					
Thr	Lys	Gly	Pro	Pro	Ala	Leu	Ser	Pro	Gly	Arg	Phe	Arg	Glu	Ala	Arg		
	50					55					60						
Asn	Ile	Arg	Gln	Gly	His	Gly	Cys	Trp									
65					70												

&lt;210&gt; 6663

&lt;211&gt; 887

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6663

Asn	Asn	Ile	Leu	Met	Arg	Pro	Ser	His	Phe	Thr	Leu	His	Ser	Cys	Arg		
1				5					10					15			
Asp	Ala	Phe	Ser	His	Phe	Leu	Leu	Phe	Thr	Leu	Val	Ser	Gly	Ser	Ile		
			20					25					30				
Cys	Leu	Ser	Ser	Cys	Glu	Asp	Asp	Met	Asp	Arg	Pro	Ser	Pro	Ser	Ser		
	35						40					45					
His	Val	Ser	Phe	Thr	Thr	Glu	Ile	Ser	Ser	Ser	Arg	Thr	Pro	Ser	Thr		
	50					55					60						
Arg	Ser	Thr	Thr	Asp	Thr	Asp	Thr	Pro	Gln	Gly	Thr	Val	Thr	Ala	Leu		
65				70						75					80		
Gln	Gly	Gly	Ser	Thr	Pro	Leu	Tyr	Leu	His	Thr	Leu	Tyr	Thr	Asp	Ser		
				85					90					95			
Ile	Ala	Leu	Pro	Pro	Ser	Asp	Ser	Arg	Pro	Asp	Arg	Gly	Val	Leu	Thr		
			100					105						110			
Arg	Ala	Thr	Pro	Ile	Lys	Asp	Ala	Asn	Met	Tyr	Glu	Ser	Phe	Gly	Val		
	115						120					125					
Ser	Ala	Tyr	Ser	Tyr	Thr	Gly	Ser	Trp	Ser	Glu	Asp	Lys	Thr	Pro	Asn		
	130					135					140						
Tyr	Phe	Tyr	Asn	Ala	Thr	Ala	Ser	Lys	Ser	Asp	Gly	Gly	Tyr	Thr	Leu		
145					150					155					160		
Ser	Ser	Thr	Tyr	Tyr	Trp	Pro	Gly	Ser	Ser	Tyr	Lys	Met	Lys	Phe	Phe		
			165					170						175			
Ala	Tyr	Ala	Pro	Thr	Ala	Asn	Thr	Gln	Tyr	Val	Leu	Ser	Gly	Arg	Thr		
			180					185					190				
His	Ala	Gly	Ser	Pro	Thr	Ile	Ser	Val	Thr	Ile	Pro	Gly	Asp	Val	Asn		
	195						200					205					
Asp	Gln	Lys	Asp	Leu	Leu	Val	Ala	Lys	Thr	Asp	Glu	Leu	Ala	Gly	Asn		
	210					215					220						
Thr	Asn	Thr	Ala	Val	Ala	Leu	Ser	Phe	Asn	His	Ala	Leu	Thr	Ala	Ile		
225					230					235					240		
Arg	Phe	Val	Cys	Gly	Asp	Asp	Met	Gln	Val	Gly	Thr	Val	Lys	Ser	Val		
			245						250					255			
Ser	Leu	Lys	Asn	Val	Tyr	Ser	Lys	Gly	Thr	Tyr	His	Met	Gly	Thr	Gln		
			260					265					270				
Ser	Trp	Ser	Asn	Val	Gly	Thr	Pro	Ala	Thr	Phe	Pro	Gln	Thr	Leu	Asn		
	275						280					285					
Lys	Ser	Ile	Thr	Gly	Thr	Pro	Asp	Glu	Pro	Leu	Thr	Val	Asp	Ala	Gln		
	290					295					300						
Thr	Phe	Met	Met	Val	Pro	Gln	Thr	Leu	Pro	Asp	Gly	Ala	Gln	Leu	Glu		
305					310					315					320		
Val	Val	Phe	Thr	Asp	Asn	Ser	Ser	Met	Asp	His	Thr	Leu	Thr	Ala	Asp		
			325						330					335			
Leu	Lys	Gly	Thr	Val	Trp	Pro	Val	Gly	Lys	Thr	Val	Thr	Tyr	Lys	Ile		
			340					345					350				
Ser	Ser	Ser	Ser	Ile	Asn	Trp	Thr	Tyr	Thr	Leu	Ala	Val	Thr	Ser	Pro		



Ala	Asp	Phe	Thr	Tyr	Glu	Gly	Gly	Thr	Gln	Gln	Tyr	Asn	Val	Thr	Ser
370						375					380				
Tyr	Arg	Gln	Asn	Thr	Lys	Gly	Val	Lys	Glu	Ala	Val	Ala	Trp	Thr	Ala
385					390					395					400
Gln	Tyr	Ser	Glu	Asp	Gly	Gly	Ala	Ser	Trp	Ser	Asn	Thr	Arg	Pro	Gly
				405					410					415	
Trp	Leu	Asp	Ala	Phe	Thr	Val	Ser	Gly	Asn	Gly	Gly	Asp	Thr	Pro	Gln
			420					425					430		
Ser	Tyr	Asn	Ala	Thr	Val	Ile	Ala	Gln	Thr	Gly	Val	Glu	Ala	Asn	Pro
		435					440					445			
Gln	His	Thr	Ala	Ala	Leu	Gln	Asn	Ala	Ser	Val	Lys	Gly	Thr	Glu	Thr
450						455					460				
Val	Pro	Tyr	Asn	Leu	Ala	Asn	Gln	Thr	Asn	Gly	Gly	Thr	Val	Asp	Glu
465					470					475					480
Asn	Thr	Ala	Asn	Cys	Tyr	Val	Val	Ser	Gly	Ser	Gly	Tyr	Tyr	Cys	Phe
				485					490					495	
Pro	Leu	Val	Tyr	Gly	Asn	Ala	Ile	Lys	Gly	Gly	Thr	Thr	Asn	Thr	Ser
			500					505					510		
Ala	Tyr	Thr	Ser	Thr	Ala	Pro	Ser	Gly	Thr	Thr	Ile	Leu	Ser	Pro	Phe
		515					520					525			
Ile	Asn	His	Ala	Gly	Asn	Ala	Ile	Thr	Ala	Pro	Tyr	Ile	Arg	Asn	Asn
530						535					540				
Ala	Asp	Cys	Thr	Pro	Ala	Lys	Ala	Glu	Leu	Val	Trp	Gln	Asp	Ala	Pro
545					550					555					560
Asn	Leu	Val	Thr	Asp	Ile	Lys	Tyr	Asn	Asn	Thr	Gly	Asn	Gly	Asn	Ile
				565					570					575	
Ser	Phe	Thr	Val	Asp	Lys	Asn	Thr	Ile	Arg	Gln	Gly	Asn	Ala	Ile	Ile
			580					585					590		
Ala	Ile	Lys	Asp	Ala	Gly	Asp	Asn	Val	Leu	Trp	Ser	Trp	His	Ile	Trp
		595					600					605			
Val	Thr	Asp	Glu	Asp	Ile	Asn	Asn	Val	Ile	Glu	Ile	Thr	Asn	Phe	Gln
610						615					620				
Gly	Lys	Lys	Tyr	Lys	Leu	Met	Ser	Val	Asn	Leu	Gly	Trp	Cys	Asp	Gly
625					630					635					640
Ser	Thr	Thr	Asn	Tyr	Ala	Glu	Arg	Ser	Cys	Lys	Val	Lys	Phe	Thr	Ala
				645					650					655	
Gly	Gly	Glu	Ser	Gln	Thr	Ile	Thr	Ile	Arg	Gln	Ala	Ser	Lys	Ser	Ile
				660				665						670	
Val	Val	Gly	Gly	Asn	Asn	Pro	Tyr	Gln	Trp	Gly	Arg	Lys	Asp	Pro	
		675					680					685			
Phe	Leu	Pro	Ser	Asn	Gly	Leu	Arg	Asp	Ile	Asn	Lys	Thr	Trp	Tyr	Asp
690						695					700				
Lys	Asp	Gly	Asn	Ala	His	Thr	Gly	Ser	Pro	Lys	Thr	Glu	Asp	Phe	Ser
705					710					715					720
Ile	Gly	Ala	Pro	Cys	Ile	Thr	Asn	Tyr	Ile	Leu	Lys	Pro	Asp	Val	Met
				725					730					735	
Gln	Ser	Gln	Asp	Tyr	Gly	Asp	Asn	Thr	Tyr	Ala	Asn	Leu	Trp	Ser	Ala
				740				745					750		
Asp	Asn	Asn	Val	Tyr	Thr	Ala	Asn	Asp	Glu	Asn	Val	Ile	Lys	Thr	Ile
		755					760					765			
Tyr	Asp	Pro	Ser	Pro	Val	Gly	Phe	Lys	Val	Pro	Pro	Ser	Asn	Ala	Phe
770						775					780				
Thr	Gly	Phe	Thr	Thr	Thr	Gly	Asn	Asn	Thr	Ser	Thr	Ser	Ser	Glu	Ile
785					790					795					800
Asn	Gly	Thr	Trp	Asp	Ser	Ser	Leu	Lys	Gly	Trp	Asn	Phe	Tyr	Thr	Asp
				805					810					815	
Ser	Ser	Lys	Asn	Lys	Thr	Ile	Phe	Phe	Pro	Ala	Ser	Gly	Phe	Arg	Asp
			820					825					830		

335  
 340  
 345  
 350  
 355  
 360  
 365  
 370  
 375  
 380  
 385  
 390  
 395  
 400  
 405  
 410  
 415  
 420  
 425  
 430  
 435  
 440  
 445  
 450  
 455  
 460  
 465  
 470  
 475  
 480  
 485  
 490  
 495  
 500  
 505  
 510  
 515  
 520  
 525  
 530  
 535  
 540  
 545  
 550  
 555  
 560  
 565  
 570  
 575  
 580  
 585  
 590  
 595  
 600  
 605  
 610  
 615  
 620  
 625  
 630  
 635  
 640  
 645  
 650  
 655  
 660  
 665  
 670  
 675  
 680  
 685  
 690  
 695  
 700  
 705  
 710  
 715  
 720  
 725  
 730  
 735  
 740  
 745  
 750  
 755  
 760  
 765  
 770  
 775  
 780  
 785  
 790  
 795  
 800  
 805  
 810  
 815  
 820  
 825  
 830

Tyr Ser Tyr Gly Gly Ala Leu Ile Val Gly Ser Tyr Gly Tyr Cys Trp  
           835                          840                          845  
 Ser Ala Val Pro Ser Ile Gln Tyr Tyr Ala Arg Asn Leu Asn Phe Asn  
           850                          855                          860  
 Ser Ser Phe Val Asn Pro Leu Asn Asn Ser Ser Arg Ala Cys Gly Phe  
 865                          870                          875                          880  
 Gly Val Arg Ser Ser Gln Glu  
                           885

<210> 6664  
 <211> 87  
 <212> PRT  
 <213> B.fragilis

<400> 6664  
 Arg Gly Val Leu Pro Pro Cys Lys Ala Val Thr Val Pro Cys Gly Val  
 1                          5                          10                          15  
 Ser Val Ser Val Val Glu Arg Val Asp Gly Val Arg Glu Glu Leu Ile  
                           20                          25                          30  
 Ser Val Val Lys Glu Thr Cys Glu Glu Gly Glu Gly Arg Ser Met Ser  
                           35                          40                          45  
 Ser Ser Gln Glu Glu Arg Gln Ile Leu Pro Glu Thr Ser Val Lys Ser  
                           50                          55                          60  
 Arg Lys Cys Glu Lys Ala Ser Leu Gln Glu Cys Asn Val Lys Trp Glu  
 65                          70                          75                          80  
 Gly Leu Ile Ser Ile Leu Phe  
                           85

<210> 6665  
 <211> 67  
 <212> PRT  
 <213> B.fragilis

<400> 6665  
 Ala Thr Leu Trp Glu Thr Ile Met Gln Pro Ser Ala Phe Leu Arg Asp  
 1                          5                          10                          15  
 Lys Val Glu Asn Ser Lys Asn Arg Leu Ser Glu Ala Leu Thr Lys Leu  
                           20                          25                          30  
 Asp Gly Thr Val Ser Ser Leu His Glu Ala Ser Thr Ile Ser Val Ser  
                           35                          40                          45  
 Ala Lys Ala Lys Arg Thr Leu Glu Gln Gly Arg Glu Ala Thr Cys Gln  
                           50                          55                          60  
 Lys Lys Gly  
 65

<210> 6666  
 <211> 61  
 <212> PRT  
 <213> B.fragilis

<400> 6666  
 Glu Asn Gly Arg Ala Asn Arg Pro Cys Thr Glu Pro Glu Val His Thr  
 1                          5                          10                          15  
 Gln Ser Lys His Asn His Pro Leu Arg Val Ile Pro Glu Ser Lys Pro  
                           20                          25                          30  
 Lys Asn Asn Glu Ser Leu Glu Lys Ser Leu Pro Thr Met Pro Val His  
                           35                          40                          45  
 Leu Ser Ala Ile Ile His Ser Ser Pro Gly Lys Gly Gly  
                           50                          55                          60

6664 6665 6666

<210> 6667  
 <211> 171  
 <212> PRT  
 <213> B.fragilis

<400> 6667

Lys Pro Gln Arg Met Lys Ser Leu Ser Phe Arg Lys Asp Leu Ile Gly  
 1 5 10 15  
 Val Gln Glu Glu Leu Leu Arg Phe Ala Tyr Lys Leu Thr Ala Asn Arg  
 20 25 30  
 Glu Glu Ala Asn Asp Leu Leu Gln Glu Thr Ser Leu Lys Ala Leu Asp  
 35 40 45  
 Asn Glu Asp Lys Phe Met Pro Asp Thr Asn Phe Lys Gly Trp Met Tyr  
 50 55 60  
 Thr Ile Met Arg Asn Ile Phe Ile Asn Asn Tyr Arg Lys Ile Val Arg  
 65 70 75 80  
 Asp Gln Thr Tyr Val Asp Gln Thr Asp Asn Leu Phe His Leu Asn Leu  
 85 90 95  
 Pro Gln Asp Ser Gly Phe Glu Ser Thr Glu Gly Ala Tyr Asp Leu Lys  
 100 105 110  
 Glu Met His Arg Val Val Asn Ala Leu Pro Lys Glu Tyr Lys Val Pro  
 115 120 125  
 Phe Ser Met His Val Ser Gly Phe Lys Tyr Arg Glu Ile Ala Glu Lys  
 130 135 140  
 Leu Glu Leu Pro Leu Gly Thr Val Lys Ser Arg Ile Phe Phe Thr Arg  
 145 150 155 160  
 Gln Arg Leu Gln Gln Glu Leu Lys Asp Phe Val  
 165 170

<210> 6668  
 <211> 744  
 <212> PRT  
 <213> B.fragilis

<400> 6668

Asp Arg Phe Ser Ile Val Tyr Ser Gly Ile Ile Ile His Gly Ile Asp  
 1 5 10 15  
 Asp Leu Pro Thr Gly Cys Lys Gly Leu Asn Val Pro Leu His Ser Leu  
 20 25 30  
 Thr Ala Val Gln Ala Asn Lys Tyr Lys Thr Glu Glu Met Lys Val His  
 35 40 45  
 Lys Lys Asn Pro Ser Trp Met Ala Gly Gly Met Ala Thr Met Leu Leu  
 50 55 60  
 Cys Thr Leu Leu Phe Ser Cys Asn Asn Glu Asp Phe Leu Glu Ser Gly  
 65 70 75 80  
 Asn Pro Glu Lys Ala Gly Asp Asn Ile Cys Phe Gly Ile Ser Ser Asp  
 85 90 95  
 Lys Asn Met Gln Thr Arg Gly Tyr Ala Gly Ser Asp Asp Glu Gly Tyr  
 100 105 110  
 Thr Ala Asp Arg Phe Val Leu Arg Ser Asp Asp Ser Ala Asp Thr Leu  
 115 120 125  
 Cys Val Arg Ala Ile Val Ser Asp Gly Ile Asn Val Ser Gly Phe Glu  
 130 135 140  
 Gly Glu Gln Ala Leu Thr Arg Gly Thr Leu Val Gly Lys Asp Asn Phe  
 145 150 155 160  
 Tyr Asn Lys Phe His Val Leu Ala Tyr Trp Ser Lys Asn Gly Ala Ser  
 165 170 175  
 Ile Asp Gln Phe Tyr Met Asn Thr Asn Ala Ser Asn Ala Ala Ala Ser

	180		185		190
Val Gly Thr Gly Ala Ile Trp Ser Thr Glu Gln Ile Tyr Tyr Trp Pro					
	195		200		205
Gly Ala Asp His Ser Phe Gln Phe Tyr Ala Trp Ala Pro Thr Asp Ala					
	210		215		220
Gly Gly Leu Ile Thr Pro Ser Asp Pro Ser Ser Lys Glu Leu Lys Tyr					
225		230		235	240
Thr Val Pro Ala Asp Ala Ala Asp Gln Lys Asp Ile Val Val Ala Thr					
	245		250		255
Thr Asn Glu Ile Pro Gly Asn Asn Asn Ala Val Pro Leu Asn Phe					
	260		265		270
Lys His Ile Cys Thr Ala Val Arg Phe Ala Val Gly Ser Gln Met Gln					
	275		280		285
Pro Gly Ser Ile Lys Ser Val Ala Leu Lys Gly Val Lys Asn Ala Gly					
	290		295		300
Thr Tyr Asp Met Val Ala Gly Thr Trp Thr Leu Gly Asp Ala Thr Val					
305		310		315	320
Asp Phe Ser Gln Glu Leu Asn Lys Glu Thr Thr Gly Ser Glu Ala Asn					
	325		330		335
Gly Ala Glu Ile Thr Ser Ala Glu Gly Thr Phe Met Met Leu Pro Gln					
	340		345		350
Thr Leu Pro Ala Asp Ala Met Val Glu Val Val Phe Thr Asn Ala Asn					
	355		360		365
Ala Ser Gly Val Asp Arg Thr Leu Thr Ala Ser Ile Gly Asn Thr Glu					
	370		375		380
Trp Lys Thr Gly Thr Thr Val Thr Tyr Ile Leu Ser Ile Thr Pro Glu					
385		390		395	400
Tyr Glu Leu Glu Phe Val Ser Gln Pro Glu Thr Gln Asp Ala His Tyr					
	405		410		415
Val Ile Tyr Pro Ile Ala Ile Lys Ala Asp Lys Phe Pro Glu Gly Gly					
	420		425		430
Trp Thr Leu Thr Ser Asn Asp Lys Glu Asn Val Thr Phe Val Glu Lys					
	435		440		445
Phe Ala Asp Asp Gly Ile Lys Asn Leu Val Asp Gln Gly Tyr Trp Leu					
	450		455		460
Lys Asp Tyr Cys Gly Ala Ser Thr Leu Thr Gly Ser Ser Phe Gly Glu					
465		470		475	480
Val Pro Ile Tyr Val Phe Leu Lys Glu Asn Ile Ser Glu Lys Asp Arg					
	485		490		495
Glu Ile Val Leu Ser Leu Ala Pro Ala Asn Asp Pro Asn Ala Lys Pro					
	500		505		510
Lys Thr Phe Thr Phe Lys Gln His Cys Pro Ala Trp Asn Asn Gly Ile					
	515		520		525
Gly Val Glu Arg Ile Gln Gly Lys Asp Tyr Pro Trp Gly Phe Asn Trp					
	530		535		540
Ser Ser Asp Met Lys Ile Thr Tyr Ser Met Pro Ser Gly Leu Trp Ser					
545		550		555	560
Gly Ile Ile His Val Leu Phe Glu Ile Phe Gly Asp His Ser Tyr Val					
	565		570		575
Glu Ser Ser Gly Leu Ala Val Leu Gly Thr Trp Lys Val Ile Val Asn					
	580		585		590
Phe Ala Lys Val Pro Ser Leu Thr Ile Ala Ile Ser Pro Thr Asp Gly					
	595		600		605
Ile Thr Asn Thr Trp Glu Leu Tyr Asn Phe Asp Gly Ile Asn Glu Ala					
	610		615		620
Ser Ile Ile Met Ser Gln Leu Glu Ser Trp Gly Gly Val Pro Asp Lys					
625		630		635	640
Glu Leu Pro Val Asn Pro Ser Glu Phe Val Ala Trp Ala Cys Ala Lys					
	645		650		655

180 185 190  
 195 200 205  
 210 215 220  
 225 230 235  
 240 245 250  
 255 260 265  
 270 275 280  
 285 290 295  
 300 305 310  
 315 320 325  
 330 335 340  
 345 350 355  
 360 365 370  
 375 380 385  
 390 395 400  
 405 410 415  
 420 425 430  
 435 440 445  
 450 455 460  
 465 470 475  
 480 485 490  
 495 500 505  
 510 515 520  
 525 530 535  
 540 545 550  
 555 560 565  
 570 575 580  
 585 590 595  
 600 605 610  
 615 620 625  
 630 635 640  
 645 650 655

Lys Asn Arg Phe Gly Val Glu Arg Lys Ser Asn Ser Gly Glu Thr Ile  
 660 665 670  
 Tyr Val Pro Thr Leu Glu Gln Thr Asp Met Val Trp Tyr Leu Pro Ala  
 675 680 685  
 Gln Glu Glu Ala Leu Tyr Met Lys Asp Asp Leu Ser Glu Asn Tyr Trp  
 690 695 700  
 Thr Ser Thr Ala Ile Thr Asp Pro Gly Thr Thr Ala Tyr Thr Tyr Thr  
 705 710 715 720  
 Ala Glu Ser Gly Ser Thr Ser Gly Met Asp Arg Asn Glu Val Ile His  
 725 730 735  
 Val Arg Ala Val Arg Lys Lys Pro  
 740

&lt;210&gt; 6669

&lt;211&gt; 497

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6669

Arg Gly Gly Ser Arg Ile Asp Arg Leu Pro Arg Ser Phe Tyr Phe Arg  
 1 5 10 15  
 Ser Tyr Ile Gly Phe His Ile Ile Asp Leu Tyr Ile Leu Phe Leu Gln  
 20 25 30  
 Lys Arg Ile Ser Thr His Ser Phe Leu Thr Tyr Met Tyr Thr Glu Ile  
 35 40 45  
 Ile Asn Lys Tyr Asn Val Pro Val Pro Arg Tyr Thr Ser Tyr Pro Pro  
 50 55 60  
 Ala Asn Tyr Phe Glu Pro Phe Thr Asn Ala Arg Tyr Leu Glu Ala Val  
 65 70 75 80  
 Gln Gln Ser Asn Gln Ala Ser Glu Arg Ala Leu Ser Phe Tyr Leu His  
 85 90 95  
 Ile Pro Phe Cys Arg His Leu Cys His Tyr Cys Gly Cys Asn Ser Tyr  
 100 105 110  
 Pro Met Ala Arg Pro Glu Ile Ile Glu Ser Tyr Val Val Ala Leu His  
 115 120 125  
 Gln Glu Ile Asp Leu Ile Leu Pro Leu Leu Asp Lys Asp Arg Pro Ile  
 130 135 140  
 Ala Gln Ile His Tyr Gly Gly Ser Pro Thr Ala Ile Pro Val Ala  
 145 150 155 160  
 Leu Ile Lys Glu Leu Asn Ala His Leu Leu Ser Ser Phe Pro Ala Ile  
 165 170 175  
 Asp Arg Pro Glu Ile Ala Ile Glu Cys His Pro Gly Tyr Leu Ser Glu  
 180 185 190  
 Lys Asp Trp Leu Gln Leu Thr Glu Cys Gly Phe Asn Arg Leu Ser Ile  
 195 200 205  
 Gly Val Gln Asp Phe Asn Ile Glu Val Leu Lys Thr Val Asn Arg Arg  
 210 215 220  
 Pro Ser Leu Leu Pro Met Glu Asp Ile Phe Ile Leu Leu Arg Glu Lys  
 225 230 235 240  
 Gly Ile Ser Ile Asn Leu Asp Phe Leu Tyr Gly Leu Pro Lys Gln Thr  
 245 250 255  
 Val Glu Asn Phe Thr Arg Asn Ile Lys Gln Ala Ile Leu Leu Ser Pro  
 260 265 270  
 Asp Arg Leu Val Met Phe Ser Tyr Ala His Val Pro Trp Ile Asn Lys  
 275 280 285  
 Arg Gln Leu Leu Leu Glu Lys Ser Gly Leu Pro Asp Asn His Glu Lys  
 290 295 300  
 Gln Thr Met Phe Asp Thr Ala Ala Gly Leu Leu His Lys Ser Gly Tyr  
 305 310 315 320

[illegible]

```
<210> 6670
<211> 71
<212> PRT
<213> B.fragilis
```

[illegible]

```
<210> 6671
<211> 426
<212> PRT
<213> B.fragilis
```

Ile	Met	Lys	Arg	Gly	Lys	Arg	Leu	Ile	Leu	Pro	Leu	Leu	Gly	Thr	Leu
1				5					10					15	
Ile	Leu	Thr	Ser	Leu	Phe	Ser	Cys	Gly	Val	Asp	Arg	Trp	Pro	Glu	Tyr
			20					25					30		
Tyr	Pro	Glu	Thr	Gly	Arg	Asp	Ile	Trp	Ile	Asp	Ser	Val	Met	Arg	Gln
		35				40						45			
Glu	Tyr	Leu	Trp	Tyr	Arg	Asp	Met	Ser	Ser	Pro	Ala	Ala	Pro	Asp	Tyr
	50					55					60				
Phe	Gln	Lys	Pro	Glu	Ala	Phe	Leu	Lys	Lys	Ala	Val	Ala	Ser	Met	Asp
65					70					75					80
Asn	Gly	Phe	Ser	Lys	Ile	Asp	Ser	Leu	Leu	Asp	Glu	Pro	Ile	Pro	Ser

				85				90						95		
Tyr	Gly	Phe	Asp	Tyr	Thr	Leu	Tyr	Lys	Val	Leu	Asp	Asn	Asp	Thr	Ala	
			100					105					110			
Tyr	Asn	Ala	Leu	Ile	Ser	Tyr	Val	Val	Pro	Gly	Ser	Pro	Ala	Glu	Glu	
		115					120					125				
Ala	Gly	Leu	Gln	Arg	Gly	His	Trp	Ile	Met	Met	Met	Asn	Gly	Asp	Tyr	
	130				135					140						
Ile	Thr	Lys	Lys	Val	Glu	Ser	Glu	Leu	Leu	Gln	Gly	Ser	Thr	Arg	Gln	
145				150					155					160		
Leu	Gln	Ile	Gly	Val	Tyr	Lys	Glu	Val	Val	Gly	Glu	Asp	Gly	Glu	Val	
			165				170							175		
Thr	Gly	Gly	Val	Val	Pro	Ile	Gly	Glu	Thr	Thr	Met	Pro	Ala	Ser	Arg	
			180				185						190			
Ser	Leu	Val	Asp	Lys	Pro	Val	His	Arg	Phe	Glu	Ile	Ile	Pro	Trp	Asn	
		195				200						205				
Gly	Lys	Lys	Val	Gly	Tyr	Leu	Met	Tyr	Asn	Glu	Phe	Lys	Ala	Gly	Pro	
	210					215				220						
Thr	Thr	Asp	Ser	Gln	Ala	Tyr	Asn	Asp	Asp	Leu	Arg	Arg	Ala	Phe	Arg	
225				230						235					240	
Asp	Phe	Gln	Thr	Gly	Gly	Val	Asn	Glu	Phe	Val	Leu	Asp	Leu	Arg	Tyr	
			245					250						255		
Asn	Thr	Gly	Gly	Ser	Leu	Asp	Cys	Ala	Gln	Leu	Leu	Cys	Thr	Met	Leu	
		260					265						270			
Ala	Pro	Ala	Asp	Lys	Met	Asn	Gln	Leu	Leu	Ala	Leu	Leu	Arg	Tyr	Ser	
		275					280					285				
Asp	Lys	Arg	Val	Glu	Ala	Asn	Gln	Asp	Leu	Thr	Phe	Asn	Pro	Glu	Leu	
	290					295				300						
Ile	Gln	Ser	Gly	Ala	Asn	Leu	Asn	Leu	Ser	Thr	Val	Tyr	Val	Leu	Thr	
305				310					315					320		
Thr	Asn	Ala	Thr	Arg	Gly	Ala	Ala	Glu	Met	Val	Ile	Asn	Cys	Leu	Asn	
			325					330						335		
Pro	Tyr	Met	Lys	Val	Val	Leu	Ile	Gly	Thr	Lys	Thr	Ala	Gly	Glu	Tyr	
			340					345					350			
Val	Ala	Thr	Lys	Pro	Phe	Val	His	Pro	Thr	Asp	Arg	Phe	Ile	Leu	Asn	
		355				360					365					
Leu	Val	Val	Cys	Asn	Val	Tyr	Asn	Ala	Glu	Glu	Lys	Ser	Asp	Tyr	Ala	
	370				375					380						
Thr	Gly	Phe	Lys	Pro	Thr	Tyr	Glu	Tyr	Asn	Glu	Asp	Ser	Tyr	Leu	Ser	
385				390					395					400		
Thr	Tyr	Leu	Pro	Phe	Gly	Asn	Thr	Asn	Glu	Thr	Leu	Leu	Asn	Ala	Ala	
			405					410						415		
Leu	Lys	Ile	Met	Ser	Gly	Ile	Thr	Asp	Lys							
			420					425								

&lt;210&gt; 6672

&lt;211&gt; 203

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6672

Ile	Thr	Ile	Leu	Ile	Leu	Lys	Ser	Met	Lys	Lys	Asn	Phe	Ile	Thr	Val
1			5					10					15		
Thr	Pro	Asp	Ser	Gly	Thr	Ser	Gly	Ser	Ser	Asn	Thr	Ile	Ser	Val	Ala
		20					25					30			
Ala	Glu	Pro	Asn	Ile	Leu	Leu	Lys	Glu	Arg	Ser	Glu	Ile	Leu	Asn	Phe
		35				40					45				
Asn	Ala	Ser	Gly	Gly	Val	Ser	Lys	Ser	Val	Gln	Val	Ile	Gln	Asn	Ser
	50				55					60					
Met	Pro	Tyr	Phe	Pro	Ile	Arg	Phe	Pro	Phe	Val	Leu	Asn	Met	Asn	Lys

65 70 75 80  
 Phe Ile Gly Asn Leu Lys Val Asp Ser Ser Gly Val Leu Gln Gly Ala  
 85 90 95  
 Tyr Ser Ile Ser Glu Ile Lys Ser Ile Asp Pro Ser Ala Tyr Asp Ser  
 100 105 110  
 Ser Leu Gly Glu Gly Trp Gly Met Gly Ser Thr Gln Lys Met Leu Ile  
 115 120 125  
 Tyr Asp Pro Phe Ser Asn Val Thr Glu Ile Val Ala His Ile Ile Asp  
 130 135 140  
 Ser Ser Gly Thr Tyr Asp Ala Asn Phe Ile Ser Ser Asn Ala Asn Met  
 145 150 155 160  
 Gly Arg Ile Trp Gly Asp Pro Gly Leu Leu Tyr Gln Lys Leu Leu Lys  
 165 170 175  
 Ile Ile Ser Glu Asp Tyr Thr Lys Gly Gly Tyr Glu Ile Arg Ile Asn  
 180 185 190  
 Ser Val Leu Ala Met Lys Phe Val Phe Val Glu  
 195 200

<210> 6673  
 <211> 388  
 <212> PRT  
 <213> B.fragilis

<400> 6673  
 Ser Asn Ile Ile Ile Phe Met Lys Lys Asn Leu Leu Phe Thr Ala Ile  
 1 5 10 15  
 Ala Val Ala Val Leu Ala Ser Cys Ser Asn Asp Asp Val Val Asp Val  
 20 25 30  
 Asn Asn Gly Ser Gly Ile Ser Phe Arg Ala Ser Leu Asp Lys Ala Ile  
 35 40 45  
 Thr Arg Ser Asn Val Thr Asn Leu Gln Asn Leu Ala Ala Phe Asn Val  
 50 55 60  
 Thr Ala Ile Gly Asn Gly Ala Asn Phe Phe Thr Asp Leu Ser Val Thr  
 65 70 75 80  
 Ser Thr Asp Asn Gly Thr Asn Trp Thr Thr Ala Ser Thr Tyr Tyr Trp  
 85 90 95  
 Pro Asn Tyr Ala Leu Ser Phe Phe Ala Tyr Ala Pro Gln Thr Pro Gly  
 100 105 110  
 Gly Thr Val Ser Ile Asp Asn Thr Ala Lys Lys Ile Thr Gly Phe Ser  
 115 120 125  
 Pro Ala Gln Ser Val Ala Asp Gln Lys Asp Leu Val Ile Ser Tyr Asn  
 130 135 140  
 Thr Gly Thr Lys Gly Ser Asn Glu Asn Ala Gly Val Ala Met Asn Phe  
 145 150 155 160  
 Lys His Ala Leu Ser Gln Ile Val Val Asn Ala Lys Cys Ser Asn Asp  
 165 170 175  
 Lys Ile Lys Ile Glu Val Leu Gly Val Lys Leu Val Asn Ala Ala Ala  
 180 185 190  
 Lys Ala Asp Phe Ala Phe Pro Glu Ala Val Thr Asn Thr Gly Tyr Thr  
 195 200 205  
 Leu Pro Gln Gly Gln Trp Ser Asn Leu Ser Glu Lys Asp Asp Pro Ser  
 210 215 220  
 Lys Ala Tyr Met Ile Arg Gly Asp Ala Pro Leu Thr Leu Thr Ala Asp  
 225 230 235 240  
 Ala Gln Ser Ile Met Phe Gly Asp Asn Asn Leu Met Leu Ile Pro Gln  
 245 250 255  
 Gln Leu Thr Ala Trp Asn Gly Thr Val Ala Thr Ala Gly Ala Tyr Leu  
 260 265 270  
 Ser Val Leu Cys Arg Ile Tyr Ser Leu Asp Gly Gly Asn Glu Thr Leu



275                      280                      285  
 Leu Tyr Pro Glu Pro Thr Ser Thr Asp Asp Lys Ser Gly Lys Tyr Ala  
 290                      295                      300  
 Phe Ser Ala Ile Gly Ile Asn Thr Asn Trp Glu Pro Gly Lys Lys Tyr  
 305                      310                      315                      320  
 Thr Tyr Thr Leu Asn Phe Cys Gly Asp Gly Gly Gly Gly Lys Ile  
 325                      330                      335  
 Asp Pro Thr Pro Thr Asp Pro Thr Lys Pro Thr Asp Pro Thr Val Asp  
 340                      345                      350  
 Pro Thr Pro Ile Asp Gly Gly Ser Gly Gly Asp Pro Ile Leu Gly Lys  
 355                      360                      365  
 Pro Ile Lys Phe Thr Val Thr Val Asp Asp Trp Thr Asp Gln Pro Val  
 370                      375                      380  
 Asp Val Pro Met  
 385

<210> 6674

<211> 291

<212> PRT

<213> B.fragilis

<400> 6674

Asn Asp Val Met Lys Leu Leu Tyr Phe Lys Glu His Leu Ser Cys Ile  
 1                      5                      10                      15  
 Asn Tyr Gln Ile Asn Val Asn Thr Gly Phe Val Tyr Tyr Asn Leu Glu  
 20                      25                      30  
 Lys Asp Ser Val Ser Lys Ile Asp Asn Ser Ala Ser Pro Cys Ile Leu  
 35                      40                      45  
 Phe Leu Leu Asp Gly Glu Val Ser Ile Asp Ser Gly Glu Tyr Gln Asn  
 50                      55                      60  
 Val His Ile Glu Lys Asp Lys Met Val Leu Ile Pro Gln His Val Asp  
 65                      70                      75                      80  
 Asn Lys Ile Glu Val Ile Tyr Asp Ala Lys Cys Leu Leu Leu Phe Trp  
 85                      90                      95  
 Asn Lys Asp Ile Arg Val Cys Asp Lys Val Tyr Met Asn Ser Leu Ser  
 100                      105                      110  
 Ser Tyr Lys Glu Arg Lys Lys Glu Met Cys Val Leu Pro Ile Arg Asp  
 115                      120                      125  
 Pro Leu Gln Ala Val Leu Asn Ser Val Val Ala Tyr Leu Tyr Ala Lys  
 130                      135                      140  
 Met Gln Cys Lys His Met His Leu Ile Lys Gln Glu Val Leu Leu  
 145                      150                      155                      160  
 Val Leu Arg Gly Tyr Tyr Thr Lys Lys Glu Leu Phe Thr Phe Phe Ser  
 165                      170                      175  
 Ser Ile Leu Gly Asn Thr Gly His Phe Glu Asp Phe Val Met Asn Asn  
 180                      185                      190  
 Tyr Arg Lys Val Lys Ser Val Lys Glu Phe Ala Gly Leu Tyr Cys Thr  
 195                      200                      205  
 Ser Glu Arg Ser Phe Asn Arg Lys Phe Gln Asn Cys Phe Lys Glu Ser  
 210                      215                      220  
 Pro Tyr Gln Trp Met Gln Lys Lys Lys Ala Glu Leu Ile Arg Glu Lys  
 225                      230                      235                      240  
 Ile Ser Glu Ser Asp Thr Pro Phe Gln Glu Ile Ala Met Asp Phe Asp  
 245                      250                      255  
 Phe Asn Ser Gln Ala His Phe Thr Ser Tyr Cys Lys Arg Leu Phe Gly  
 260                      265                      270  
 Met Thr Pro Ser Lys Leu Arg Thr Glu Ser Lys Lys Val Ala Pro Asp  
 275                      280                      285  
 Leu Glu Tyr

6674  
 291  
 PRT  
 B.fragilis  
 6674

<400> 6675

[illegible]

<210> 6676  
 <211> 283  
 <212> PRT  
 <213> B.fragilis

<400> 6676

Lys His Ile Met Lys Ser Leu Glu Thr Met Ala Arg Tyr Lys Lys Glu  
 1 5 10 15  
 Leu Thr Glu Cys Ala Arg Asn Leu Lys Leu Pro Phe Leu Ala Glu His  
 20 25 30  
 Leu Asp Glu Ile Leu His Glu Ala Gln Glu Lys Gln Gln Thr Tyr Ser  
 35 40 45  
 Glu Phe Leu Ser Thr Cys Leu Met Arg Glu Leu Arg Asp Lys Glu Arg  
 50 55 60  
 Arg Ser Tyr Leu Thr Arg Leu Lys Phe Ala Gly Leu Pro Ala Arg Tyr  
 65 70 75 80  
 Asp Leu Asp Leu Tyr Asp Phe Ser Arg Thr Glu Gly Ile Asp Gln Arg  
 85 90 95  
 Gln Met Arg Glu Leu Arg Glu Leu Val Trp Ile Arg Arg Thr Tyr Asn  
 100 105 110  
 Leu Leu Leu Val Gly Asp Ser Gly Thr Gly Lys Thr Phe Ile Ala Ser  
 115 120 125  
 Gly Leu Ile His Glu Ala Val Lys Ala Gly Tyr Lys Ala Tyr Leu Leu  
 130 135 140  
 Thr Leu Glu Glu Leu Leu Val Cys Leu Lys Ala Lys Glu Ile Ser Arg  
 145 150 155 160  
 Pro Ala Met Lys Thr Tyr Lys Arg Ile Met Lys Ala Gln Leu Leu Ala  
 165 170 175  
 Ile Asp Asp Val Thr Leu Phe Pro Leu Lys Gly Glu Asp Val Leu Leu  
 180 185 190  
 Leu Phe Lys Leu Val Asn Cys Val Gln Gly Lys Thr Ser Leu Ile Ile  
 195 200 205  
 Ala Ala Ser Arg Asp Leu Thr Gly Trp Leu Glu Met Ala Gly Asp Glu  
 210 215 220  
 Val Cys Ala Ala Ala Leu Leu Asp Arg Leu Leu Tyr Cys Cys Glu Ile  
 225 230 235 240  
 Ile Arg Leu Leu Gly Lys Ser Tyr Arg Met Glu Asn Arg Lys Thr Ile  
 245 250 255  
 Phe Ser Asn Gln Gln Ile Gly Thr Ala Pro Gln Lys Gly Leu Met Lys  
 260 265 270  
 Val Lys Lys Arg Thr Lys Glu Ser Gly Tyr Cys  
 275 280

<210> 6677  
 <211> 594  
 <212> PRT  
 <213> B.fragilis

<400> 6677

Leu Thr Ala Met Lys Lys Glu Ile Lys Phe Ser Leu Val Tyr Arg Asp  
 1 5 10 15  
 Met Trp Gln Ser Ser Gly Lys Tyr Gln Pro Arg Val Asp Gln Leu Val  
 20 25 30  
 Arg Ile Ala Pro Leu Ile Ile Glu Met Gly Cys Phe Ala Arg Val Glu  
 35 40 45  
 Thr Asn Gly Gly Ala Phe Glu Gln Val Asn Leu Leu Tyr Gly Glu Asn  
 50 55 60

Pro	Asn	Lys	Ala	Val	Arg	Ala	Phe	Thr	Lys	Pro	Phe	Asn	Asp	Ala	Gly
65					70					75					80
Ile	Gln	Thr	His	Met	Leu	Asp	Arg	Gly	Leu	Asn	Gly	Leu	Arg	Met	Tyr
				85					90					95	
Pro	Val	Pro	Ala	Asp	Val	Arg	Arg	Leu	Met	Tyr	Lys	Val	Lys	His	Ala
			100					105					110		
Gln	Gly	Val	Asp	Ile	Thr	Arg	Ile	Phe	Cys	Gly	Leu	Asn	Glu	Val	Arg
	115					120						125			
Asn	Ile	Ile	Pro	Ser	Ile	His	Tyr	Ala	Leu	Glu	Gly	Gly	Met	Ile	Pro
	130				135						140				
Gln	Ala	Thr	Leu	Cys	Ile	Thr	Phe	Ser	Pro	Val	His	Thr	Val	Glu	Tyr
145				150						155				160	
Tyr	Thr	Ala	Ile	Ala	Asp	Lys	Leu	Ile	Glu	Ala	Gly	Ala	Pro	Glu	Ile
			165						170					175	
Cys	Leu	Lys	Asp	Met	Ala	Gly	Val	Gly	Arg	Pro	Ala	Met	Leu	Gly	Gln
		180						185					190		
Leu	Thr	Lys	Ala	Ile	Lys	Glu	Arg	His	Pro	Glu	Val	Leu	Ile	Gln	Tyr
	195						200					205			
His	Gly	His	Ser	Gly	Pro	Gly	Leu	Ser	Met	Ala	Ser	Ile	Leu	Glu	Val
	210					215					220				
Cys	Glu	Asn	Gly	Ala	Asp	Ile	Ile	Asp	Val	Ala	Met	Glu	Pro	Met	Ser
225				230						235				240	
Trp	Gly	Lys	Val	His	Pro	Asp	Val	Ile	Ser	Val	Gln	Ala	Met	Leu	Lys
			245						250					255	
Asp	Ala	Gly	Phe	Arg	Val	Pro	Glu	Ile	Asn	Met	Lys	Ala	Tyr	Met	Lys
		260						265					270		
Ala	Arg	Ala	Met	Thr	Gln	Glu	Phe	Ile	Asp	Asp	Phe	Leu	Gly	Tyr	Phe
	275						280					285			
Met	Asp	Pro	Thr	Asn	Lys	His	Met	Ser	Ser	Leu	Leu	Leu	Lys	Cys	Gly
	290					295					300				
Leu	Pro	Gly	Gly	Met	Met	Gly	Ser	Met	Met	Ala	Asp	Leu	Lys	Gly	Val
305				310						315				320	
His	Ala	Gly	Ile	Asn	Met	Ile	Leu	Lys	Ser	Asn	Asn	Gln	Pro	Glu	Leu
			325						330					335	
Ser	Ile	Asp	Asp	Leu	Leu	Val	Met	Leu	Phe	Asp	Glu	Val	Glu	Tyr	Val
		340						345					350		
Trp	Pro	Lys	Leu	Gly	Tyr	Pro	Pro	Leu	Val	Thr	Pro	Phe	Ser	Gln	Tyr
	355						360					365			
Val	Lys	Asn	Val	Ala	Leu	Met	Asn	Val	Met	Ala	Arg	Val	Lys	Gly	Glu
	370					375					380				
Glu	Arg	Trp	Ser	Met	Ile	Asp	Asn	Asn	Thr	Trp	Gly	Met	Ile	Leu	Gly
385				390						395				400	
Lys	Ser	Gly	Arg	Leu	Pro	Gly	Pro	Leu	Asp	Pro	Glu	Ile	Val	Ala	Leu
			405						410					415	
Ala	Lys	Glu	Lys	Gly	Tyr	Glu	Phe	Thr	Asp	Glu	Asp	Pro	Gln	Lys	Asn
		420						425					430		
Tyr	Pro	Asp	Gln	Leu	Asp	Glu	Tyr	Arg	Lys	Glu	Met	Gln	Glu	Asn	Gly
	435						440					445			
Trp	Glu	Ser	Gly	Pro	Asp	Asp	Glu	Glu	Leu	Phe	Glu	Leu	Ala	Met	His
	450					455					460				
Asp	Arg	Gln	Tyr	Arg	Asp	Tyr	Lys	Ser	Gly	Val	Ala	Lys	Lys	Arg	Phe
465				470						475				480	
Glu	Glu	Asp	Leu	Gln	Arg	Ala	Lys	Asp	Ala	Ala	Leu	Ala	Lys	Gln	Gly
			485						490					495	
Phe	Ser	Glu	Glu	Asp	Val	Lys	Arg	Met	Lys	Arg	Ala	Lys	Ala	Glu	Pro
	500							505					510		
Ile	Thr	Ala	Met	Glu	Lys	Gly	Arg	Ile	Ile	Trp	Glu	Ile	Asp	Val	Glu
	515						520					525			
Ser	Pro	Ser	Met	Pro	Pro	Glu	Val	Gly	His	Lys	Tyr	Glu	Pro	Asp	Asp

12345678910111213141516171819202122232425262728293031323334353637383940414243444546474849505152535455565758596061626364656667686970717273747576777879808182838485868788899091929394959697989910010110210310410510610710810911011111211311411511611711811912012112212312412512612712812913013113213313413513613713813914014114214314414514614714814915015115215315415515615715815916016116216316416516616716816917017117217317417517617717817918018118218318418518618718818919019119219319419519619719819920020120220320420520620720820921021121221321421521621721821922022122222322422522622722822923023123223323423523623723823924024124224324424524624724824925025125225325425525625725825926026126226326426526626726826927027127227327427527627727827928028128228328428528628728828929029129229329429529629729829930030130230330430530630730830931031131231331431531631731831932032132232332432532632732832933033133233333433533633733833934034134234334434534634734834935035135235335435535635735835936036136236336436536636736836937037137237337437537637737837938038138238338438538638738838939039139239339439539639739839940040140240340440540640740840941041141241341441541641741841942042142242342442542642742842943043143243343443543643743843944044144244344444544644744844945045145245345445545645745845946046146246346446546646746846947047147247347447547647747847948048148248348448548648748848949049149249349449549649749849950050150250350450550650750850951051151251351451551651751851952052152252352452552652752852953053153253353453553653753853954054154254354454554654754854955055155255355455555655755855956056156256356456556656756856957057157257357457557657757857958058158258358458558658758858959059159259359459559659759859960060160260360460560660760860961061161261361461561661761861962062162262362462562662762862963063163263363463563663763863964064164264364464564664764864965065165265365465565665765865966066166266366466566666766866967067167267367467567667767867968068168268368468568668768868969069169269369469569669769869970070170270370470570670770870971071171271371471571671771871972072172272372472572672772872973073173273373473573673773873974074174274374474574674774874975075175275375475575675775875976076176276376476576676776876977077177277377477577677777877978078178278378478578678778878979079179279379479579679779879980080180280380480580680780880981081181281381481581681781881982082182282382482582682782882983083183283383483583683783883984084184284384484584684784884985085185285385485585685785885986086186286386486586686786886987087187287387487587687787887988088188288388488588688788888989089189289389489589689789889990090190290390490590690790890991091191291391491591691791891992092192292392492592692792892993093193293393493593693793893994094194294394494594694794894995095195295395495595695795895996096196296396496596696796896997097197297397497597697797897998098198298398498598698798898999099199299399499599699799899910001001100210031004100510061007100810091010101110121013101410151016101710181019102010211022102310241025102610271028102910301031103210331034103510361037103810391040104110421043104410451046104710481049105010511052105310541055105610571058105910601061106210631064106510661067106810691070107110721073107410751076107710781079108010811082108310841085108610871088108910901091109210931094109510961097109810991100110111021103110411051106110711081109111011111112111311141115111611171118111911201121112211231124112511261127112811291130113111321133113411351136113711381139114011411142114311441145114611471148114911501151115211531154115511561157115811591160116111621163116411651166116711681169117011711172117311741175117611771178117911801181118211831184118511861187118811891190119111921193119411951196119711981199120012011202120312041205120612071208120912101211121212131214121512161217121812191220122112221223122412251226122712281229123012311232123312341235123612371238123912401241124212431244124512461247124812491250125112521253125412551256125712581259126012611262126312641265126612671268126912701271127212731274127512761277127812791280128112821283128412851286128712881289129012911292129312941295129612971298129913001301130213031304130513061307130813091310131113121313131413151316131713181319132013211322132313241325132613271328132913301331133213331334133513361337133813391340134113421343134413451346134713481349135013511352135313541355135613571358135913601361136213631364136513661367136813691370137113721373137413751376137713781379138013811382138313841385138613871388138913901391139213931394139513961397139813991400140114021403140414051406140714081409141014111412141314141415141614171418141914201421142214231424142514261427142814291430143114321433143414351436143714381439144014411442144314441445144614471448144914501451145214531454145514561457145814591460146114621463146414651466146714681469147014711472147314741475147614771478147914801481148214831484148514861487148814891490149114921493149414951496149714981499150015011502150315041505150615071508150915101511151215131514151515161517151815191520152115221523152415251526152715281529153015311532153315341535153615371538153915401541154215431544154515461547154815491550155115521553155415551556155715581559156015611562156315641565156615671568156915701571157215731574157515761577157815791580158115821583158415851586158715881589159015911592159315941595159615971598159916001601160216031604160516061607160816091610161116121613161416151616161716181619162016211622162316241625162616271628162916301631163216331634163516361637163816391640164116421643164416451646164716481649165016511652165316541655165616571658165916601661166216631664166516661667166816691670167116721673167416751676167716781679168016811682168316841685168616871688168916901691169216931694169516961697169816991700170117021703170417051706170717081709171017111712171317141715171617171718171917201721172217231724172517261727172817291730173117321733173417351736173717381739174017411742174317441745174617471748174917501751175217531754175517561757175817591760176117621763176417651766176717681769177017711772177317741775177617771778177917801781178217831784178517861787178817891790179117921793179417951796179717981799180018011802180318041805180618071808180918101811181218131814181518161817181818191820182118221823182418251826182718281829183018311832183318341835183618371838183918401841184218431844184518461847184818491850185118521853185418551856185718581859186018611862186318641865186618671868186918701871187218731874187518761877187818791880188118821883188418851886188718881889189018911892189318941895189618971898189919001901190219031904190519061907190819091910191119121913191419151916191719181919

530                      535                      540  
 Val Phe Cys Tyr Ile Ala Thr Pro Trp Asn Thr Tyr Asp Arg Val Leu  
 545                      550                      555                      560  
 Ala Asn Phe Ser Gly Arg Ile Ile Glu Val Cys Ala Lys Gln Gly Ala  
                     565                      570                      575  
 Leu Val Asn Lys Gly Asp Ala Leu Ala Tyr Val Glu Arg Cys Glu Glu  
                     580                      585                      590  
 Pro Ala

<210> 6678  
 <211> 152  
 <212> PRT  
 <213> B.fragilis

<400> 6678  
 Met Ser Gln Ile Gly Tyr Lys Ser Ser Glu Thr Ser Val Val Tyr Ile  
 1                      5                      10                      15  
 Ile Thr Lys Thr Met Pro Tyr Phe Asn Gly Gln Leu His Phe Phe Thr  
                     20                      25                      30  
 Phe Thr Leu His Ile Gln Tyr Gln Ser Leu Lys Leu Leu Asn Met Lys  
                     35                      40                      45  
 Leu Asp Glu Asn Ile Leu Lys Thr Cys Gln Gly Leu Val Met Asn Cys  
                     50                      55                      60  
 Asn Cys Lys Val Leu Ile Leu Asn Val Leu Gly Glu His Arg Val Phe  
 65                      70                      75                      80  
 Leu Val Asn Asp Val His Leu Lys Thr Arg Glu Cys Arg Tyr Asn Glu  
                     85                      90                      95  
 Val Arg Asp Ala Gln Asp Ile Thr Thr Leu Val Leu Asn Ile Gly His  
                     100                      105                      110  
 Asn Phe Ala Asn Gly Met Thr Glu Gln Thr Leu Leu Glu Arg Thr Gln  
                     115                      120                      125  
 Ser Ile His Lys Glu Asp Phe Lys Phe Gly Thr Asp Asn Tyr Leu Trp  
                     130                      135                      140  
 Ile Thr Lys Val Asp Leu Asn Arg  
 145                      150

<210> 6679  
 <211> 772  
 <212> PRT  
 <213> B.fragilis

<400> 6679  
 Tyr Asn Lys Met Asn Asn Ala Lys Leu Leu His Leu Met Val Tyr Ile  
 1                      5                      10                      15  
 Leu Thr Ile Ile Leu Gly Gln Ser Cys Thr Glu Val Asp Ile Thr Met  
                     20                      25                      30  
 Pro Lys Gly Pro Lys Gly Asp Arg Gly Met Ser Ala Tyr Glu Phe Trp  
                     35                      40                      45  
 Lys Glu Asn Val Glu Asn Gly Val Ile Ser Trp Pro Lys Lys Glu Thr  
                     50                      55                      60  
 Glu Ile Thr Asp Phe Phe Lys Tyr Leu Lys Gly Lys Asp Gly Leu Asp  
 65                      70                      75                      80  
 Gly Lys Ser Ala Phe Glu Leu Trp Lys Glu Glu Val Ala Thr Gly Ala  
                     85                      90                      95  
 Leu Asp Asn Pro His Arg Pro Gly Ser Met Trp Pro Val Ser Gln Asn  
                     100                      105                      110  
 Asn Leu Arg Asp Phe Trp Tyr Tyr Leu Thr Gly Ala Ser Gly Glu Asn  
                     115                      120                      125

Gly 130	Gln	Thr	Pro	His	Ile	Gly 135	Asn	Asn	Met	Asn	Trp 140	Trp	Ile	Gly	Asn
Lys 145	Asp	Thr	Gly	Ile	Arg	Ala	Gln	Gly	Arg	Asp	Gly 155	Gln	Asn	Gly	Glu 160
Asp	Ala	Val	Pro	Pro	Val	Val	Thr	Ile	Gly	Asp	Asn	Gly	Asn	Trp	Leu
Ile	Asp	Gly	Val	Asp	Thr	Gly	Lys	Pro	Ser	Arg	Gly	Glu	Glu	Gly	Val
Ala	Gly	Thr	Thr	Pro	Thr	Val	Thr	Ile	Gly	Glu	Asn	Gly	Asn	Trp	Val
Ile	Asn	Gly	Lys	Asp	Thr	Gly	Lys	Ala	Ala	Ile	Gly	Lys	Asp	Gly	Arg
Ser 225	Pro	Glu	Val	Ile	Ile	Gly	Thr	Asn	Gly	Asn	Trp	Tyr	Ile	Asn	Gly
Lys	Asp	Thr	Gly	Ile	Arg	Ala	Tyr	Gly	Lys	Asp	Gly	Ala	Asn	Gly	Lys
Asp	Gly	Ile	Asn	Gly	Lys	Asp	Gly	Ala	Asn	Gly	Lys	Asp	Gly	Ala	Asn
Gly	Lys	Asp	Gly	Ile	Asn	Gly	Lys	Asp	Gly	Ala	Ala	Gly	Lys	Asp	Gly
Ala	Asn	Gly	Lys	Asp	Gly	Ala	Asn	Gly	Lys	Ser	Ala	Tyr	Glu	Leu	Trp
Val 305	Glu	Ser	Val	Glu	Ala	Gly	Cys	Asn	Asn	Thr	Gly	Pro	Lys	Val	Lys
Asn	Pro	His	Asn	Pro	Ser	Leu	Asp	Trp	Asp	Cys	Gly	Lys	Thr	Thr	Leu
Ser	Asp	Phe	Trp	Glu	Phe	Leu	Arg	Gly	Ala	Asp	Gly	Lys	Asp	Gly	Ala
Asp	Gly	Lys	Asp	Gly	Lys	Pro	Gly	Val	Pro	Gly	Lys	Pro	Gly	Ala	Glu
Val	Thr	Ile	Ile	Lys	Gly	Val	Pro	Asn	Val	Ile	Ala	Leu	Tyr	Ser	Gln
Gln 385	Glu	Phe	Gly	Glu	Tyr	Val	Arg	Thr	Thr	Asp	Gly	Gly	Val	Ala	Tyr
Arg	Val	Tyr	Asp	Glu	Ser	Gly	Asn	Lys	Ala	Pro	Lys	Ala	Val	Val	Lys
Gly	Ile	Pro	Gly	Leu	Asp	Pro	Ala	Lys	Thr	Tyr	Thr	Ala	Asn	Glu	Glu
Gly	Glu	Phe	Ile	Ile	Pro	Lys	Glu	Asp	Leu	Pro	Gln	Ile	Asp	Asp	Ile
Asp	Ala	Arg	Trp	Gly	Lys	Val	Lys	Glu	Val	Thr	Ile	Asn	Lys	Val	Thr
Lys 465	Glu	Ser	Ala	Glu	Asn	Thr	Tyr	Val	Pro	Asn	Arg	Met	Gln	Ile	Arg
Met	Ile	Tyr	Ile	Ala	Thr	Ser	Pro	Tyr	Leu	Asp	Tyr	Glu	His	Asn	Leu
Gln	Phe	Arg	Val	Glu	Arg	Lys	Thr	Asp	Pro	Ser	Ala	Glu	Trp	Lys	Thr
Leu	Pro	Ser	Tyr	Leu	Pro	Asn	Val	Asn	Ala	Val	Phe	Thr	Ala	Tyr	Gln
Val	Thr	Asn	Pro	Glu	Asp	Pro	Thr	Ser	Leu	Asp	Lys	Thr	Lys	Lys	Ile
Glu 545	Ser	Thr	Thr	Pro	Asn	Met	Ser	Ser	Thr	Ser	Met	Ser	Ile	Asn	Pro
Asn	Arg	Tyr	Val	Lys	Glu	Asn	Pro	Ala	Gly	Ile	Lys	Asn	Gly	Ile	Thr
Asp	Phe	Trp	Asp	Gly	Lys	Asp	Asn	Tyr	Phe	Ser	Ile	Val	Lys	Asp	Thr
Pro	Tyr	Tyr	Gly	Glu	Thr	Ile	Tyr	Trp	Asn	Gly	Val	Cys	Lys	Met	Ala

595	600	605
Pro Tyr Gln Ile	Pro Pro Thr Leu Lys Thr Leu	Ala Leu Thr Lys Ala
610	615	620
Ser Ala Glu Ser Gly Asp Asp Val Phe Leu Asn Lys Ala Gln Gly Glu		
625	630	635
Phe Asp Phe Ser Thr Ile Asp Phe Asn Ile Ile Cys Lys His Glu Leu		
	645	650
Val Lys Thr Val Lys Pro Asn Gly Ile Asp Tyr Ile Glu Pro Glu Tyr		
	660	665
Tyr Ala Pro Glu Glu Ala Lys Glu Leu Leu Leu Cys Tyr Val Lys Phe		
	675	680
Thr Tyr Thr Ser Pro Leu Gly Val Gln Thr Ala Thr Ser Glu Leu Asn		
	690	695
Met Ser Ser Tyr Lys Lys Pro Glu Tyr Ala Ala Leu Ser Pro Tyr Leu		
705	710	715
Gly Ala Thr Ile Tyr Ser Val Gly Ala Ser Ser Thr Phe Ile Tyr Ser		
	725	730
Ser Asn Val Ser Leu Gly Val Leu Lys Lys Lys Ala Asp Asn Gly Thr		
	740	745
Tyr Tyr Val Glu Asn Thr Tyr Lys Asp Met Pro Glu Ile Ser Val Thr		
	755	760
Tyr Lys Glu Lys		765
770		

&lt;210&gt; 6680

&lt;211&gt; 182

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6680

Thr Ser Pro Ile Cys Phe Thr Ala Val Thr Trp Ser His Thr Val Ala		
1	5	10
Glu Arg Ser Thr Glu Thr Asp Val Ile Pro Val Thr Met His Pro Met		
	20	25
Val Phe Thr Tyr Leu Val Arg Tyr Glu Phe Ser His Gly Val Glu Tyr		
	35	40
Val Ser Leu Ala Arg Gly Ala Leu Ala Gly Met Ala Gln Ala Val Trp		
	50	55
Leu Asn Ser Gly His Thr Ser Asp Glu Ala Ala Thr Val Leu Tyr Asp		
65	70	75
Cys Thr Val Glu Asp Phe Gly Thr Gln Ala Leu Val Arg Ser Phe Gly		
	85	90
Ile Pro Asp Phe Pro Asn Glu His Tyr Gly Thr Arg Ala Glu Arg Lys		
	100	105
Tyr Gly Leu Asn Leu Glu Val Arg Leu Lys Asn Gly Lys Ile Lys Ser		
	115	120
Phe Asp Phe Asp Val Thr Asp Gln Val Val Ala Gln Pro Gln Gly Gly		
	130	135
Val Ile Val Val Lys Gly Ile Glu Ile Ser Asp Glu Glu Gly Thr Glu		
145	150	155
Gly Gly Ser Gly Phe Asp Val Asp Val Asp Asp Trp Gly Asp Tyr Glu		
	165	170
Asp Ile Glu Leu Pro Leu		175
180		

&lt;210&gt; 6681

&lt;211&gt; 86

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6681

```

Arg Tyr Glu Ile Phe Ile Ile Val Ser Ile Leu Gln Lys Ala Met Thr
1           5           10           15
Ala Tyr Asp Leu Lys Asn Ile Ala Ser Ala Gly Gly Asn Ile Val Val
          20           25           30
Asn Ala Glu Asp Phe Ser Ala Tyr Asp Leu Lys Asn Ile Ala Glu Asn
          35           40           45
Gly Val Ala Thr Lys Ala Lys Leu Thr Ile Lys Asn Ala Gly Gly Leu
          50           55           60
Ser Gly Tyr Asp Cys Lys Asn Ile Ala Ser Ala Asn Pro Gly Asn Val
65           70           75           80
Thr Phe Asp Phe Ser Glu
          85

```

&lt;210&gt; 6682

&lt;211&gt; 234

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6682

```

Thr Leu Trp Ile Ile Lys Gly Ser Ala Leu Ile Leu Glu Glu Ser Pro
1           5           10           15
Ile Gln Gln Lys Val Gln Thr Arg His Ser Gly Gln Pro Ile Ser Ser
          20           25           30
Gly Leu Phe Ile Cys Val Phe Val Gln Ala Phe Gly Asp Ala Phe Glu
          35           40           45
Phe Thr Gln Val Ala Val His Phe Leu Cys Asn Asn Val Ile Ser His
          50           55           60
Trp Leu Ser Glu Lys Asn Ser Lys Asn Phe Ala Ile Met Lys Lys Tyr
65           70           75           80
Phe Val Leu Ser Val Phe Ile Met Leu Ile Gly Ala Phe Thr Asn Val
          85           90           95
Gln Gly Gln Asn Ser Ala Thr Pro Asp Lys Gly Val Leu Val His Gly
          100          105          110
Asn Val Arg Leu Cys Asn Tyr Glu Arg Gly Cys Leu Ile Thr Asp Asn
          115          120          125
Asp Met Lys His Trp Thr Gln Lys Leu Glu Ile Ser Tyr Asp Gly Ser
          130          135          140
Asp Lys Thr Tyr Gly Ile Tyr Ile Asn Val Arg Gly Asp Ile Ile Asn
145          150          155          160
Leu Gly Val Lys Tyr Lys Ser Ser Gly Thr Glu Ser Tyr Thr Tyr Glu
          165          170          175
Gly Thr Asp Arg Val Thr Gly Arg Lys Val Val Val Val Thr Lys Gln
          180          185          190
Lys Leu Ser Trp Tyr Leu Asn Asn Asn Gly Val Asp Ser His Thr Glu
          195          200          205
Val Glu Ser Pro Lys Gly Ile Ile Val Thr Val Pro Ala Thr Tyr Thr
          210          215          220
Val Phe Ser Val Val Pro Ile Lys Asn Lys
225          230

```

&lt;210&gt; 6683

&lt;211&gt; 282

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6683

```

Asn Asn His Phe Ile Ile Thr Tyr Ile Ile Met Asn Lys Val Phe Leu

```



1                      5                      10                      15  
 Phe Leu Leu Phe Ser Phe Leu Thr Ile Thr Ser Met Ala Gln Glu Lys  
                     20                      25                      30  
 Ile Lys Gln Thr Ala Gly Arg Asp Gln Leu Gly Asp Phe Ala Pro Lys  
                     35                      40                      45  
 Phe Ala Glu Leu Asn Asp Asp Val Leu Phe Gly Glu Ile Trp Ser Arg  
                     50                      55                      60  
 Thr Asp Lys Leu Ser Leu Arg Asp Arg Ser Leu Val Thr Ile Thr Ser  
 65                      70                      75                      80  
 Leu Ile Ser Gln Gly Ile Thr Asp Asn Ser Leu Thr Phe His Leu Gln  
                     85                      90                      95  
 Ser Ala Lys Asn Asn Gly Ile Ser Arg Thr Glu Ile Ser Glu Ile Ile  
                     100                      105                      110  
 Thr His Ile Gly Phe Tyr Ala Gly Trp Pro Lys Ala Trp Ala Ala Phe  
                     115                      120                      125  
 Arg Leu Ala Lys Glu Val Trp Ala Lys Asp Thr Thr Gly Val Asp Ala  
                     130                      135                      140  
 Lys Ala Ala Phe Gln Arg Glu Met Ile Phe Pro Ile Gly Glu Pro Asn  
 145                      150                      155                      160  
 Thr Ala Tyr Ala Gln Tyr Phe Thr Gly Asn Ser Tyr Leu Ala Pro Ile  
                     165                      170                      175  
 Ser His Glu Gln Val Asn Ile Ser Asn Val Thr Phe Glu Pro Gly Cys  
                     180                      185                      190  
 Arg Asn Asn Trp His Val His His Ala Lys Lys Gly Gly Gln Met  
                     195                      200                      205  
 Leu Ile Gly Ile Ala Gly Arg Gly Trp Tyr Gln Glu Gly Lys Pro  
                     210                      215                      220  
 Ala Val Glu Ile Leu Pro Gly Thr Val Ile His Ile Pro Ala Asn Val  
 225                      230                      235                      240  
 Lys His Trp His Gly Ala Thr Ala Glu Ser Trp Phe Ala His Leu Ala  
                     245                      250                      255  
 Phe Glu Ile Pro Gly Glu Asp Ser Ser Asn Glu Trp Leu Glu Pro Val  
                     260                      265                      270  
 Thr Asn Lys Glu Tyr Asn Arg Leu Pro Gln  
                     275                      280

<210> 6684  
 <211> 61  
 <212> PRT  
 <213> B.fragilis

<400> 6684  
 Ile Asn Thr Val Pro Ser Ser Leu Leu Thr Leu Thr Ala Arg Lys Asn  
 1                      5                      10                      15  
 Gly Gln His Asp Thr Glu Cys Lys Lys Thr Cys Arg Thr Ala Glu Arg  
                     20                      25                      30  
 Phe Leu Glu His Gly Thr Val Tyr Glu Pro Gly Ile Gly His Thr Gly  
                     35                      40                      45  
 Ala Asp Glu Ser Arg Gln Lys Lys Asn Glu Leu Phe His  
                     50                      55                      60

<210> 6685  
 <211> 74  
 <212> PRT  
 <213> B.fragilis

<400> 6685  
 Tyr Leu Tyr Val Ala Pro Asp His Ile Lys Leu Asn Leu Gln Phe Lys  
 1                      5                      10                      15

Asn	Gly	Phe	Tyr	His	Leu	Lys	Lys	Gln	Asp	Asp	Gly	Trp	Leu	Thr	Thr
			20					25					30		
Glu	Ile	Asn	Leu	Val	Pro	Phe	Leu	Ser	Val	Lys	Phe	Leu	Thr	Ala	Leu
		35					40					45			
Leu	Phe	Ile	Gln	Lys	Leu	Phe	Tyr	Phe	Gln	Glu	Leu	Ile	Leu	Ser	Asn
	50					55					60				
Gly	Cys	Lys	Ala	Leu	Lys	Thr	Gln	Ser	Asn						
65					70										

&lt;210&gt; 6686

&lt;211&gt; 636

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6686

Thr	Phe	Asn	Val	Ile	Phe	Ser	Met	Lys	Gln	Met	Met	Lys	Lys	Tyr	Leu
1				5					10					15	
Tyr	Met	Ala	Ala	Val	Ala	Val	Val	Gly	Thr	Gly	Phe	Leu	Met	Ser	Ser
			20					25					30		
Cys	Lys	Asp	Glu	Phe	Ala	Gly	Gln	Asn	Thr	Asn	Pro	Ser	Thr	Val	Ser
		35					40					45			
Lys	Pro	Asn	Val	Arg	Tyr	Leu	Phe	Thr	Gln	Cys	Ala	Met	Ser	Phe	Gln
	50					55					60				
Pro	Ala	Asp	Tyr	Leu	Gln	Trp	Phe	Ala	Gly	Phe	Asp	Ala	Met	Ser	Thr
65				70					75						80
Trp	Val	Gln	Ala	Thr	Ala	Ser	Gly	Gly	Gly	Asn	Ser	Ser	Lys	Leu	Asn
				85					90					95	
Met	Val	Thr	Gln	Thr	Gly	Cys	Gly	Tyr	Gln	Val	Asn	Glu	Val	Leu	Arg
			100					105					110		
Tyr	Thr	Asn	Glu	Ile	Lys	His	Gln	Ile	Ser	Leu	Met	Ser	Asp	Asp	Glu
		115					120					125			
Lys	Ala	Lys	Tyr	Glu	Tyr	Ile	Ala	Tyr	Leu	Cys	Asn	Pro	Met	Leu	Val
	130					135					140				
Tyr	Leu	Gly	Leu	Glu	Asp	Ser	Asp	Met	Tyr	Gly	Ser	Arg	Gln	Tyr	Ser
145					150					155					160
Glu	Ala	Glu	Met	Ala	Arg	Tyr	Gly	Gly	Thr	Leu	Thr	Pro	Lys	Tyr	Asp
				165					170					175	
Thr	Gln	Glu	Glu	Leu	Phe	Glu	Leu	Trp	Leu	Lys	Gln	Leu	Asp	Glu	Thr
			180					185					190		
Ile	Asn	Tyr	Leu	Arg	Glu	Asn	Asn	Pro	Gln	Asp	Val	Leu	Gly	Ala	Gln
	195						200					205			
Asp	Phe	Ile	Tyr	Arg	Gly	Lys	Leu	Asp	Lys	Trp	Ala	Lys	Leu	Ala	Asn
	210					215					220				
Ser	Leu	Lys	Leu	Arg	Ile	Ala	Ala	Arg	Leu	Ile	Asn	Lys	Asp	Lys	Ala
225				230						235					240
Arg	Ala	Ile	Ala	Ile	Val	Asn	Glu	Ala	Ala	Gln	Asn	Pro	Ala	Gly	Leu
				245					250					255	
Ile	Leu	Thr	Leu	Asp	Asp	Asp	Phe	Val	Phe	Asn	Lys	Gly	Lys	Arg	Asp
			260					265					270		
Asn	Asn	Trp	Asn	Asn	Asp	Ile	Ser	Val	Gly	Ala	Gly	Thr	Lys	Gln	Leu
		275				280						285			
Ile	Asp	Phe	Met	Val	Ser	Asn	Arg	Asp	Pro	Arg	Leu	Phe	Tyr	Phe	Phe
	290					295					300				
Gln	Lys	Asn	Asp	Tyr	Asn	Ser	Asn	Val	Val	Gln	Gly	Phe	Phe	Asp	Gln
305					310					315					320
Lys	Arg	Ala	Leu	Pro	Ser	Tyr	Val	Glu	Ala	Asn	Val	Asn	Tyr	Thr	Val
				325					330					335	
Asp	Ala	Asp	Gly	Lys	Lys	His	Phe	Glu	Ser	Trp	Lys	Ala	Pro	Gly	Glu
			340					345					350		

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65  
66  
67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82  
83  
84  
85  
86  
87  
88  
89  
90  
91  
92  
93  
94  
95  
96  
97  
98  
99  
100  
101  
102  
103  
104  
105  
106  
107  
108  
109  
110  
111  
112  
113  
114  
115  
116  
117  
118  
119  
120  
121  
122  
123  
124  
125  
126  
127  
128  
129  
130  
131  
132  
133  
134  
135  
136  
137  
138  
139  
140  
141  
142  
143  
144  
145  
146  
147  
148  
149  
150  
151  
152  
153  
154  
155  
156  
157  
158  
159  
160  
161  
162  
163  
164  
165  
166  
167  
168  
169  
170  
171  
172  
173  
174  
175  
176  
177  
178  
179  
180  
181  
182  
183  
184  
185  
186  
187  
188  
189  
190  
191  
192  
193  
194  
195  
196  
197  
198  
199  
200  
201  
202  
203  
204  
205  
206  
207  
208  
209  
210  
211  
212  
213  
214  
215  
216  
217  
218  
219  
220  
221  
222  
223  
224  
225  
226  
227  
228  
229  
230  
231  
232  
233  
234  
235  
236  
237  
238  
239  
240  
241  
242  
243  
244  
245  
246  
247  
248  
249  
250  
251  
252  
253  
254  
255  
256  
257  
258  
259  
260  
261  
262  
263  
264  
265  
266  
267  
268  
269  
270  
271  
272  
273  
274  
275  
276  
277  
278  
279  
280  
281  
282  
283  
284  
285  
286  
287  
288  
289  
290  
291  
292  
293  
294  
295  
296  
297  
298  
299  
300  
301  
302  
303  
304  
305  
306  
307  
308  
309  
310  
311  
312  
313  
314  
315  
316  
317  
318  
319  
320  
321  
322  
323  
324  
325  
326  
327  
328  
329  
330  
331  
332  
333  
334  
335  
336  
337  
338  
339  
340  
341  
342  
343  
344  
345  
346  
347  
348  
349  
350  
351  
352  
353  
354  
355  
356  
357  
358  
359  
360  
361  
362  
363  
364  
365  
366  
367  
368  
369  
370  
371  
372  
373  
374  
375  
376  
377  
378  
379  
380  
381  
382  
383  
384  
385  
386  
387  
388  
389  
390  
391  
392  
393  
394  
395  
396  
397  
398  
399  
400

Pro Trp Val Arg Tyr Tyr Gly Val Pro Cys Gln Val Asp Ile Asn Lys  
 355 360 365  
 Lys Glu Glu Tyr Lys Asp Tyr Phe Asp Pro Asn Asn Glu Leu Phe Tyr  
 370 375 380  
 Leu Leu Ser Lys Asp Gly Ala Lys Lys Thr Tyr Thr Pro Ile Ala Tyr  
 385 390 395 400  
 Arg Asn Thr Glu Asn Ile Lys Gly Leu Leu Ile Tyr Thr Phe Pro Asp  
 405 410 415  
 Val Pro Asp Val Ala Pro Val Gln Asp Lys Glu Glu Tyr Gly Trp Tyr  
 420 425 430  
 Gly Leu Tyr Phe Ser Ala Gly Glu Thr Asn Leu Leu Leu Ala Glu Phe  
 435 440 445  
 Lys Leu Leu Gly Ala Asn Leu Pro Met Thr Ala Gln Gln Tyr Leu Ser  
 450 455 460  
 Ala Gly Val Glu Met Ser Val Arg Gly Tyr Asp Phe Val Ser Ala Lys  
 465 470 475 480  
 Asn His Ile Pro Tyr Tyr Asp Lys Thr Tyr Thr Gly Asp Val His Asp  
 485 490 495  
 Lys Thr Ile Ser Leu Lys Glu Gly Met Ile Asp Glu Met Leu Ser His  
 500 505 510  
 Asp Ala Tyr His Leu Thr Gly Asp Leu Ser Lys Asp Leu Glu Lys Val  
 515 520 525  
 Tyr Ile Gln Gln Tyr Ile His Tyr Leu Met Leu Pro Met Asp Met Phe  
 530 535 540  
 Val Thr Ala Arg Arg Ser Gly Val Pro Met Lys Asn Ser Thr Leu Leu  
 545 550 555 560  
 Pro Tyr Gln Asp Phe Asp Pro Leu Leu Gly Asp Gln Tyr Val Ile Pro  
 565 570 575  
 Arg Arg Phe Pro Val Ser Lys Pro Leu Asp Ser Asp Leu Leu Arg Asp  
 580 585 590  
 Ile Thr Ile Ala Ala Tyr Gln Ala Gln Gly Tyr Thr Tyr Glu Gly Glu  
 595 600 605  
 Met Ser Asn Ser Pro Val Thr Leu Ser Lys Glu Arg Val Trp Tyr Asp  
 610 615 620  
 Lys Glu Ala Pro Ala Phe Gly Thr Gly Pro Gln Gln  
 625 630 635

&lt;210&gt; 6687

&lt;211&gt; 124

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6687

Glu Val Ala Val Tyr Asp Asn Leu Pro Val Tyr Lys Ala Ala Tyr Asp  
 1 5 10 15  
 Leu Leu Arg Ser Val Tyr Glu Lys Thr Gly Lys Ile Pro Arg Asp Val  
 20 25 30  
 Lys Tyr Thr Leu Val Glu Val Leu Lys Lys Asp Leu Thr Glu Ile Met  
 35 40 45  
 Val Met Ile Tyr Arg Ala Asn Ala Thr Thr Gly Lys Leu Pro Tyr Ile  
 50 55 60  
 Glu Arg Ala Arg Asp Leu Val Val Gly Val Lys Val Arg Leu Arg Leu  
 65 70 75 80  
 Leu Gln Asp Met Arg His Ile Ser Val Lys Gln Tyr Ala Ala Phe Ala  
 85 90 95  
 Gln Gln Val Glu Leu Leu Ser Lys Gln Leu Ser Ala Trp His Asp Tyr  
 100 105 110  
 Ala Arg Arg Gln Asp Ala Lys Ser Gln Glu Lys Ile  
 115 120

<210> 6688  
 <211> 584  
 <212> PRT  
 <213> B.fragilis

<220>  
 <221> UNSURE  
 <222> (1), (584)  
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 6688

Xaa	Thr	Leu	Phe	Ile	Ile	Leu	Phe	Ser	Leu	Gly	Tyr	Ser	Gly	Ile	Tyr
1				5					10					15	
Ser	Gln	Glu	Gln	Gln	Val	Lys	Lys	Asp	Ser	Val	Tyr	Gln	Leu	Gln	Glu
			20					25					30		
Ile	Val	Val	Ser	Ser	Gln	Gln	Ile	Leu	Gly	Ser	Lys	Phe	Lys	Ala	Arg
			35				40					45			
Asn	Arg	Thr	Gly	Ser	Ala	Tyr	Tyr	Ile	Ser	Pro	Glu	Glu	Ile	Arg	Arg
			50			55					60				
Leu	Gly	Tyr	Thr	Asp	Ile	Asn	Arg	Met	Leu	Lys	Ala	Val	Pro	Gly	Val
65					70			75						80	
Asn	Met	Tyr	Glu	Glu	Asp	Gly	Phe	Gly	Leu	Arg	Pro	Asn	Ile	Ser	Leu
				85				90					95		
Arg	Gly	Thr	Lys	Ala	Glu	Arg	Ser	Glu	Arg	Ile	Ser	Ile	Met	Glu	Asp
			100					105					110		
Gly	Val	Leu	Ala	Ala	Pro	Ala	Pro	Tyr	Ser	Ala	Pro	Ala	Ala	Tyr	Tyr
			115				120					125			
Phe	Pro	Asn	Val	Ala	Arg	Met	Glu	Ala	Ile	Glu	Val	Leu	Lys	Gly	Ser
			130			135				140					
Ser	Gln	Val	Gln	Tyr	Gly	Pro	Phe	Thr	Thr	Gly	Gly	Ala	Ile	Asn	Leu
145					150					155				160	
Val	Ser	Thr	Pro	Ile	Pro	Asn	Ser	Phe	Ser	Gly	Lys	Ala	Asn	Ile	Ser
				165				170					175		
Tyr	Gly	Ser	Lys	Asn	Thr	Phe	Lys	Ser	His	Thr	Ser	Val	Gly	Ser	Ser
			180				185					190			
Trp	Lys	His	Phe	Gly	Tyr	Met	Val	Glu	Tyr	Leu	Arg	Tyr	Gln	Ser	Asp
		195				200					205				
Gly	Phe	Lys	Lys	Tyr	Glu	Asp	His	Ala	Ala	Lys	Gly	Phe	Lys	Arg	Asn
		210			215						220				
Asp	Ile	Ile	Ala	Lys	Ile	Arg	Val	Lys	Thr	Asp	His	Val	Lys	Gly	Val
225					230					235				240	
Asn	His	Ala	Leu	Glu	Leu	Lys	Phe	Gly	Tyr	Ala	Asp	Glu	Asn	Ser	Asp
			245					250					255		
Glu	Thr	Tyr	Val	Gly	Leu	Ser	Ala	Asp	Asp	Phe	Lys	Lys	Thr	Pro	Phe
			260					265					270		
Leu	Arg	Tyr	Ala	Gly	Ser	Gln	Met	Asp	Lys	Leu	Lys	Thr	Asp	His	Arg
			275				280					285			
Gln	Trp	Val	Ala	Thr	Tyr	Leu	Leu	Thr	Phe	Ser	Asn	Lys	Leu	Lys	Ile
		290				295					300				
Thr	Thr	Asn	Ala	Tyr	Tyr	Asn	Tyr	Phe	His	Arg	Asn	Trp	Tyr	Lys	Leu
305				310					315					320	
Asn	Asp	Val	Arg	Ala	Gly	Ile	Thr	Ser	Lys	Glu	Lys	Arg	Ser	Ile	Ala
			325					330					335		
Asp	Val	Leu	Val	Asp	Pro	Glu	Thr	Asn	Ile	Arg	Tyr	Phe	Asp	Ile	Leu
			340					345					350		
Thr	Gly	Lys	Thr	Asp	Arg	Glu	Gly	Glu	Ala	Leu	Leu	Val	Arg	Ala	Asn
		355				360						365			
Asn	Arg	Thr	Tyr	Arg	Ser	Arg	Gly	Ile	Gln	Thr	Arg	Ala	Glu	Tyr	Arg

370 375 380  
 Phe Asn Leu Asn Glu Phe Phe Phe Asp Leu Glu Phe Gly Leu Arg Tyr  
 385 390 395 400  
 His Ala Asp Glu Glu Asp Arg Phe Gln Trp Asp Asp Ser Tyr Ser Met  
 405 410 415  
 Lys Asn Lys Lys Met Val Leu Phe Met Glu Gly Ile His Gly Thr Asn  
 420 425 430  
 Ala Asn Arg Val Thr Ser Ala Asn Ala Leu Ala Gly Tyr Leu Leu Ala  
 435 440 445  
 Lys Leu Arg Tyr Asp Ala Trp Thr Val Thr Ala Gly Leu Arg Tyr Glu  
 450 455 460  
 Asp Val Asp Leu Leu Lys Lys Asp Tyr Thr Lys Glu Asp Leu Ala Arg  
 465 470 475 480  
 Ser Gly Lys Val Arg Ile Glu Thr Pro Asn His Ala Arg Val Leu Ile  
 485 490 495  
 Pro Gly Val Gly Leu His Tyr Gln Leu Met Pro Ala Ala Ser Val Phe  
 500 505 510  
 Phe Gly Ile His Lys Gly Phe Ala Pro Pro Ser Ala Glu Leu Tyr Gln  
 515 520 525  
 Lys Pro Glu Ser Ser Val Asn Met Glu Leu Gly Thr Arg Val Ala Ile  
 530 535 540  
 Gly Asn Phe Arg Ala Glu Leu Ile Gly Phe Tyr Asn Asn Tyr Ser Asn  
 545 550 555 560  
 Met Leu Gly Ser Asp Leu Ala Ala Ser Gly Gly Gly Leu His His Gly  
 565 570 575  
 Ala Ala Arg Ser Arg Ala Val Xaa  
 580

&lt;210&gt; 6689

&lt;211&gt; 61

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6689

Cys Arg His Ala Cys Pro Ser Gly Arg Gly Gly Pro Gly Asp Gly Val  
 1 5 10 15  
 Cys Pro Ala Leu Gly Thr Gly Ser Gly Gly Asp Tyr Pro Gly Gly Gly  
 20 25 30  
 Thr Gly Gly Cys Asp Gly Gly Gly Glu Asp Leu Phe Cys Cys Arg Phe  
 35 40 45  
 Ser Gly Val Gly Arg Arg Glu Trp Lys Gly Gly Leu Glu  
 50 55 60

&lt;210&gt; 6690

&lt;211&gt; 383

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6690

Val Leu Ala Tyr Gln Asp Ile Leu Arg Glu Lys Asp Leu Cys Gly Thr  
 1 5 10 15  
 Leu Cys Tyr Ser Val Val Lys His Pro Phe Asn His Lys Ile Phe Pro  
 20 25 30  
 Thr Met Ser Asp Lys Phe Gln Thr Phe Cys Phe Ser His Ser Gly Ser  
 35 40 45  
 Trp Phe Leu Pro Phe Leu Trp Leu Ser Leu Leu Ala Gly Leu Ser Ala  
 50 55 60  
 Cys Ser Trp Thr Gly Asp Arg Arg Ser Asp Cys Pro Ser Gly Phe Arg  
 65 70 75 80

Ile Arg Leu Gln Pro Ala Leu His Ala Gln Ile Gln Pro Asp Ser Gly  
                     85                    90                    95  
 Thr Gly Val Ile Thr Asp Glu Ile Asp Thr Leu Ser Leu Tyr Val Phe  
                     100                    105                    110  
 Asp Ala Gln Gly Gln Phe Val Cys Leu His Thr Glu Asn Arg Gln Ser  
                     115                    120                    125  
 Leu Thr Glu Asn Asp Tyr Ile Ile Thr Leu Pro Leu Glu Tyr Lys Asp  
                     130                    135                    140  
 Gly Asp Val Tyr Glu Leu Val Phe Trp Ala Gly Gly Asp Asn Arg His  
 145                    150                    155                    160  
 Tyr Arg Met Pro Gln Leu Thr Pro Gly Ser Ser Thr Arg Asp Glu Leu  
                     165                    170                    175  
 Thr Leu Arg Leu Glu Arg Asp Gly Asp Gly Arg Gln Asp Asp Glu Leu  
                     180                    185                    190  
 Gly His Leu Trp Tyr Gly His Leu Arg Leu Ser Arg Ile Gln Pro Ser  
                     195                    200                    205  
 Glu Leu Thr Ser Val Ser Val Pro Met Leu Lys Asp Ser Asn Arg Phe  
                     210                    215                    220  
 Val Ile Thr Leu His Asp Thr Ser Gly Gln Gly Leu Asp Ala Asp Asp  
 225                    230                    235                    240  
 Tyr Asp Phe Thr Leu Leu Ala Asp Asn Gly Arg Met Asn Ala Asp Asn  
                     245                    250                    255  
 Glu Val Met Thr Gly Asp Arg Val Thr Tyr Ala Ala Tyr His Thr Glu  
                     260                    265                    270  
 Ser Ala Ser Glu Thr Glu Pro Ala Ala Thr Arg Thr Gly Glu Val Ser  
                     275                    280                    285  
 Leu Ala Arg Ala Arg Leu Asn Thr Leu Arg Leu Leu Ala Asp Gln Glu  
                     290                    295                    300  
 Ala Arg Leu Val Val Thr Asp Arg Val Ser Gly Gln Lys Val Val Asp  
 305                    310                    315                    320  
 Val Asp Leu Thr Arg Tyr Leu Leu Met Thr Arg Pro Leu Phe Glu Glu  
                     325                    330                    335  
 Ser Asn Gly Val Glu Leu Ser Asp Gln Asp Tyr Leu Asp Tyr Glu Asp  
                     340                    345                    350  
 Arg Phe Asn Val Ile Phe Tyr Leu Thr Pro Met Gly Lys Leu Glu Ala  
                     355                    360                    365  
 Leu Asn Ile Asn Gly Trp Ile Ile Arg Leu Asn Asp Ala Gln Leu  
                     370                    375                    380

&lt;210&gt; 6691

&lt;211&gt; 292

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6691

Arg Lys Lys Glu Met Lys Lys Leu Lys Tyr Met Ser Met Met Gly Leu  
 1                    5                    10                    15  
 Ala Ala Leu Leu Leu Thr Thr Trp Ala Ala Cys Ser Asp Asp Thr Asp  
                     20                    25                    30  
 Ala Ser Gly Gly Glu Asn Pro Glu Glu Ala Arg Ala Tyr Thr Thr Val  
                     35                    40                    45  
 Thr Ile Ala Val Pro Asn Gly Val Ala Glu Thr Arg Ala Ser Asp Pro  
                     50                    55                    60  
 Thr Ala Asp Thr Asp Asp Thr Asn Met Asp Ile Gly Leu Thr Asp Glu  
 65                    70                    75                    80  
 Tyr Lys Val Thr Lys Ala Asn Leu Tyr Leu Phe Pro Gly Gly Thr Gly  
                     85                    90                    95  
 Ser Ser Phe Gly Ser Ala Lys Leu Thr Glu Ile Ile Ser Ile Ser Gln  
                     100                    105                    110

Phe Thr Gln Thr Thr Thr Thr Thr Thr Asp Gln Lys Thr Ile Val Trp  
 115 120 125  
 Thr Ser Lys Lys Thr Ala Leu Thr Pro Gly Asp Tyr Arg Ile Tyr Ile  
 130 135 140  
 Val Val Asn Gly Thr Val Asn Gly Val Gly Asp Ser Asp Lys Gly Thr  
 145 150 155 160  
 Leu Thr Glu Ala Ala Phe Leu Ala Lys Thr Thr Ala Ala Ala Thr Ser  
 165 170 175  
 Val Ile Ala Ala Val Pro Ser Asp Gly Leu Val Met Ala Ser Arg Ser  
 180 185 190  
 Pro Asn Ser Asn Asn Ser Asn Thr Leu Pro Tyr Ile Ala Gln Glu Ile  
 195 200 205  
 Thr Lys Asp Pro Glu Gln Thr Ile Ala Ala Thr Val Glu Arg Val Met  
 210 215 220  
 Gly Lys Ile Thr Val Thr Ala Gly Gly Thr Ser Ala Ser Ser Ala Ala  
 225 230 235 240  
 Thr Val Asn Lys Tyr Thr Ser Phe Ser Thr Thr Val Ala Gln Ile Asn  
 245 250 255  
 Asn Ile Lys Asp Ile Thr Leu Lys Thr His Tyr Val Val His Ala Gly  
 260 265 270  
 Lys Glu Gly Tyr Tyr Phe Arg His Val Asp Lys Glu Ser Ser Ala Thr  
 275 280 285  
 Asn Pro Leu Thr  
 290

<210> 6692  
 <211> 250  
 <212> PRT  
 <213> B.fragilis

<400> 6692  
 Gln Ile Arg Glu Arg Met Ile Lys Leu Ile Leu Pro Pro Pro Val Leu  
 1 5 10 15  
 Ala Asn Ser Tyr Gly Asn Trp Tyr Leu Gln Gly Ser Ser Ala Phe Gly  
 20 25 30  
 Leu Ser Ser Phe Gly Thr Phe Ser Gly Thr Tyr Thr Asp Met Pro Gly  
 35 40 45  
 Tyr Ser Ser Gly Ala Val Glu Thr Lys Val Ala Ala Tyr Cys Tyr Glu  
 50 55 60  
 Asn Thr Met Leu Lys Asp Lys Gln Lys Asn Gly Tyr Thr Thr Gly Ile  
 65 70 75 80  
 Val Phe Lys Ala Glu Ile Ala Pro Ser Lys Met Met Lys Lys Arg Ser  
 85 90 95  
 Ser Gly Gly Gly Val Glu Glu Thr Thr Thr Ile Gly Ser Ile Gly Glu  
 100 105 110  
 Ile Phe Tyr His Ser Gly Ile Phe Tyr Lys Asp Ile Glu Ala Leu Lys  
 115 120 125  
 Glu Ala Gly Val Leu Leu Ala Asp Gly Thr Thr Ser Ser Ser Ala Ser  
 130 135 140  
 Gly Val Pro Ala Asp Leu Lys Lys Asn Asp Val Gln Cys Phe Lys Lys  
 145 150 155 160  
 Gly Asn Thr Asp Gly Lys Phe Phe Cys Tyr Tyr Pro Tyr Trp Ile Lys  
 165 170 175  
 His Leu Pro Ser Asp Thr Ala Glu Asp Val Met Glu Phe Gly Ile Val  
 180 185 190  
 Arg Asn Asn Val Tyr Gln Val Thr Val Ala Ser Ile Gln Gly Val Gly  
 195 200 205  
 Lys Asp Gly Val Thr Glu Asn Ile Ile Thr Asp Thr Glu Thr Asp Asp  
 210 215 220

Pro Thr Thr Val Leu Leu Asn Val Lys Leu Ser Ile Lys Pro Trp Val  
 225 230 235 240  
 Val Arg Ala Asn Ser Ala Val Leu Gly Arg  
 245 250

<210> 6693  
 <211> 495  
 <212> PRT  
 <213> B.fragilis

<400> 6693  
 Ile Ser Gly Ser Glu Gln Glu Lys Phe Ser Gly Ala Asp Pro Cys Gly  
 1 5 10 15  
 His Gln Ser Asp Leu Tyr Val Lys Ile Lys Ser Leu Met Lys Glu Lys  
 20 25 30  
 Ile Arg Ser Thr Arg Leu Arg Met Cys Phe Arg Lys Met Pro Pro Ala  
 35 40 45  
 Val Cys Phe Leu Thr Leu Phe Ala Leu Cys Phe Gly Ala Leu Ser Val  
 50 55 60  
 Arg Ala Ala Asp Pro Ser Gly Arg Val Ala Leu Ser Ala Val Arg Met  
 65 70 75 80  
 Gln Arg Ala Gly Gly Gln Val Tyr Val Ser Phe Ala Val Lys Ile Ala  
 85 90 95  
 Pro Arg Ala Val Arg Ala Arg His Arg Trp Val Ile Thr Pro Cys Leu  
 100 105 110  
 Gly Asn Ala Ser Asp Ser Val Leu Leu Gly Pro Phe Val Val Thr Gly  
 115 120 125  
 Arg Ile Met Ala Arg Glu Glu Asn Gln Arg Arg Leu Leu Ala Gly Leu  
 130 135 140  
 Pro Asp Arg Asp Val Asn His Arg Trp Thr Ala Arg Asn Gly Asp Thr  
 145 150 155 160  
 Phe Leu Tyr Thr Asp Thr Leu Arg Tyr Ala Pro Trp Met Glu Asn Gly  
 165 170 175  
 Leu Asn Leu Arg Leu Asp Ile Asp Arg Glu Gly Cys Cys Arg Val Gln  
 180 185 190  
 Thr Val Gly Ser Ile Val Ser Ser Gly Ala Phe Pro Val Ala Leu Pro  
 195 200 205  
 Tyr Arg Pro Ser Val Ser Glu Leu Thr Pro Arg Val Ser Arg Thr Val  
 210 215 220  
 Ala Glu His Ala Asp Asp Tyr Pro Phe Leu Cys Glu Ala Gly Ser Arg  
 225 230 235 240  
 Pro Leu His Glu Ser Gly Ile Gly Ile Arg Phe Arg Ala Ala Ser Ala  
 245 250 255  
 Val Val Asp Thr Leu Tyr Ser Ala Asn Ala Gly Asn Leu Arg Arg Ile  
 260 265 270  
 Thr Glu Ala Ile Gly Leu Leu Arg Ala Asp Ser Cys Ala Phe Leu Gln  
 275 280 285  
 Gly Ile Ser Ile Ser Gly Tyr Ala Ser Pro Glu Gly Thr Thr Gly Leu  
 290 295 300  
 Asn Arg Lys Leu Ser Ala Lys Arg Ala Glu Ala Leu Arg His Ala Leu  
 305 310 315 320  
 Ser Val Arg Met Asn Leu Pro Val Ser Leu Phe Glu Leu Asn Ala Gly  
 325 330 335  
 Gly Val Asp Trp Asp Arg Leu Ala Glu Leu Val Asn Gly Ser Asp Met  
 340 345 350  
 Thr Tyr Lys Glu Glu Val Leu Ala Ile Leu Arg Ser His Pro Glu Glu  
 355 360 365  
 Glu Arg Asn Asp Arg Leu Lys Ala Leu Ala Gly Gly Arg Pro Tyr Arg  
 370 375 380



Ser Val Leu Asp Val Leu Tyr Pro Gln Leu Arg Asp Ala Cys Tyr Ile  
 385 390 395 400  
 Arg Val Gln Tyr Ala Asn Arg Pro Asp Ser Val Ala Asp Thr Val Asn  
 405 410 415  
 Arg Ala Ile Glu Ala Ile Arg Gly Arg Lys Tyr Glu Glu Ala Phe Arg  
 420 425 430  
 Leu Leu Lys Thr Val Glu Ala Asp Glu Arg Ser Trp Asn Val Arg Gly  
 435 440 445  
 Val Cys His Leu Leu Cys Gly Asp Asp Lys Glu Ala Gly Leu Trp Leu  
 450 455 460  
 His Arg Ala Val Lys Ala Gly Asn Arg Glu Ala Glu Glu Asn Leu Lys  
 465 470 475 480  
 Lys Met Asn Ala Glu Arg Arg Ala Ala Thr Ile Gly Ile Thr Gln  
 485 490 495

<210> 6694  
 <211> 112  
 <212> PRT  
 <213> B.fragilis

<400> 6694  
 Ala Pro Leu Leu Pro Leu Ser Ser His Ser Thr Asp Thr Phe Leu Gly  
 1 5 10 15  
 Val His Ala Gly Gly Glu Ser Asn Leu Ser Arg Val His Leu Leu  
 20 25 30  
 Phe Val Ser Arg Trp Val Ser Ser Arg Tyr Glu Gly Trp Ala Leu Met  
 35 40 45  
 Pro Gly Phe Ser Ser Gly Tyr Ser Trp Val Leu Gly Lys Arg Trp Asn  
 50 55 60  
 Leu Glu Ala Thr Ile Gly Ala Gly Trp Val His Ala Gln Tyr Lys Arg  
 65 70 75 80  
 Phe Asn Cys Pro Val Cys Gly Glu Tyr Arg Gly Ala Asn Lys Lys Asn  
 85 90 95  
 Phe Leu Ala Pro Thr Arg Ala Gly Ile Ser Leu Ile Tyr Met Leu Lys  
 100 105 110

<210> 6695  
 <211> 344  
 <212> PRT  
 <213> B.fragilis

<400> 6695  
 Arg Thr Ala Ser Pro Phe Ser Pro Ser Gly Thr Ala Ser Val Asn Gly  
 1 5 10 15  
 Arg Ser Met Lys Ser Ser Glu Asp Ser Lys Arg Ser Val Arg Ser Met  
 20 25 30  
 Gln Tyr Lys Cys Arg Pro Phe Phe Val Phe Met Gly Lys Thr Glu Glu  
 35 40 45  
 Phe Cys Cys Pro Glu Ile Gln Thr His Ile Leu His Asp Lys Met Ile  
 50 55 60  
 Met Lys Lys Glu Lys Thr Tyr Ser Arg Ala Pro Leu Pro Phe Val Gly  
 65 70 75 80  
 Gln Lys Arg Met Phe Val Ser Glu Phe Lys Lys Ile Leu Lys His Phe  
 85 90 95  
 Asp Asp Lys Thr Ile Phe Val Asp Leu Phe Gly Gly Ser Gly Leu Leu  
 100 105 110  
 Ser His Ile Thr Lys Arg Glu Arg Pro Asp Ala Val Val Ile Tyr Asn  
 115 120 125  
 Asp His Asp Asn Tyr Arg Glu Arg Leu Glu Asn Ile Asp Arg Thr Asn

130	135	140
Thr Leu Leu Arg Asp Leu Arg Lys Ile Val Gly Ile Tyr Pro Arg His		
145	150	155
Gln Lys Ile Thr Gly Lys Met Arg Glu Ala Phe Leu Glu Arg Ile Arg		160
	165	170
Leu Glu Glu Thr Thr Gly Phe Val Asp Tyr Leu Thr Leu Ser Thr Ser		175
	180	185
Leu Leu Phe Ser Gly Lys Tyr Ala Gln Asn Met Glu Glu Leu Glu Gly		190
	195	200
Leu Tyr Phe Tyr Asn Lys Ile Arg Gln Ser Asp Tyr Arg Cys Asp Gly		205
	210	215
Tyr Leu Asp Gly Leu Glu Val Val Cys Tyr Asp Tyr Lys Glu Leu Ala		220
225	230	235
Asp Thr Tyr Gly Val Phe Pro Gly Val Val Phe Leu Val Asp Pro Pro		240
	245	250
Tyr Met Gly Thr Asp Ile Ser Thr Tyr Lys Met Asp Trp Lys Leu Ala		255
	260	265
Asp Tyr Leu Asp Val Leu Leu Val Leu Lys Gly His Pro Phe Val Tyr		270
	275	280
Phe Thr Ser Gly Lys Ser Pro Ile Leu Asp Phe Cys Arg Trp Met Glu		285
	290	295
Glu His Pro Gly Ile Gly Asn Pro Phe Lys Gly Ala Gly Arg Ser Thr		300
305	310	315
Leu Thr Ala Arg Met Asn Tyr Asn Ser Ser Tyr Thr Asp Ile Met Leu		320
	325	330
Tyr Lys Asp Leu Pro Arg Ala Ala		335
	340	

<210> 6696  
 <211> 87  
 <212> PRT  
 <213> B.fragilis

<400> 6696
Ala Arg Gly Thr Thr Tyr Ile Gln Phe Ile Thr Leu Ser Ala His
1 5 10 15
Ser Met Val Arg Ala Thr Thr Val Ala Pro Ser Leu Leu Phe Lys Val
20 25 30
Ile Pro Val Gln Ala Pro Ala Gly Ile Cys Gly Thr Leu His Lys Thr
35 40 45
Asp Ile Asn Asn Ala Asp Asn Phe Val Phe Ile Leu Ser Ile Leu Met
50 55 60
Val Val Tyr Gly Ser Val Thr His Ser Ile Pro Glu Arg Leu Ile Thr
65 70 75 80
Ile Glu Ser Asn Tyr Ser Phe
85

<210> 6697  
 <211> 145  
 <212> PRT  
 <213> B.fragilis

<400> 6697
Asn Leu Lys Thr His Lys Glu Val Thr Ser Asn Lys Ser Lys Thr Leu
1 5 10 15
Asp Phe Val Ile Ser Lys Thr Met Lys Ile Phe Arg Tyr Ile Leu Leu
20 25 30
Ala Ser Leu Thr Cys Thr Leu Phe Ser Cys Gly Pro Asp Glu Leu Ile
35 40 45

Pro Glu Ser Val Pro Pro Val Val Asn Pro Gly Asp Lys Asp Glu Pro  
 50 55 60  
 Gly Glu Glu Pro Glu Glu Pro Glu Glu Pro Glu Lys Ile Gln Leu Ala  
 65 70 75 80  
 Ile Thr Ala Ser Leu Gln Asn Met Gln Gln Thr Arg Gly Ile Ile Glu  
 85 90 95  
 Ala Phe Ala Pro Gly His Glu Met Gly Val Phe Val Gly Thr Ser Gln  
 100 105 110  
 Thr Asp Glu Ala Ala Gly Ile Lys Asn Ala Ser Tyr Leu Phe Asp Gly  
 115 120 125  
 Lys Val Trp Asn Ala Gly Gln Asp Val Pro Val Glu Ala Asp Ala Gly  
 130 135 140  
 Leu  
 145

<210> 6698  
 <211> 116  
 <212> PRT  
 <213> B.fragilis

<400> 6698  
 His Thr Asp Ala His His Arg Thr Thr Gly Gly Lys Tyr Pro Cys Arg  
 1 5 10 15  
 Gly Met Arg Phe Tyr Leu Tyr Met Asn Asp Trp Leu Cys Lys Asp Lys  
 20 25 30  
 Lys Ile Phe Ala Met Thr Leu Phe Glu Ile Leu Asn Phe Asn Arg Glu  
 35 40 45  
 Leu Leu Glu Arg Leu Thr Arg Met Gly Phe Lys Pro Asp Asp Tyr Lys  
 50 55 60  
 Tyr Ile Asp Leu Tyr Lys Glu Tyr Glu Gln Met Arg Arg Gln Gly Asp  
 65 70 75 80  
 Lys Val Thr Tyr Cys Val Ala Val Leu Ser Ile Arg His Gly Val Cys  
 85 90 95  
 Glu Arg Lys Ile Tyr Glu Ile Val Gly Arg Phe Lys Lys Glu Cys Thr  
 100 105 110  
 Leu His Ala Val  
 115

<210> 6699  
 <211> 366  
 <212> PRT  
 <213> B.fragilis

<400> 6699  
 Thr Thr Ile Lys Ile Glu Ser Met Asn Thr Lys Leu Ser Ala Leu Leu  
 1 5 10 15  
 Met Ser Val Leu Cys Ser Val Pro Gln Ile Pro Ala Gly Ala Cys Thr  
 20 25 30  
 Gly Ile Thr Leu Lys Ser Lys Asp Gly Ala Thr Val Val Ala Arg Thr  
 35 40 45  
 Ile Glu Trp Ala Glu Ser Val Met Asn Cys Met Tyr Val Val Val Pro  
 50 55 60  
 Arg Ala Gln Glu Leu Gln Ser Leu Thr Pro Ser Gly Met Asp Gly Leu  
 65 70 75 80  
 Lys Phe Arg Ala Lys His Gly Phe Val Gly Leu Ala Val Glu Gln Lys  
 85 90 95  
 Glu Phe Val Val Glu Gly Met Asn Glu Lys Gly Leu Ser Ala Gly Leu  
 100 105 110  
 Tyr Tyr Phe Pro Asn Tyr Gly Arg Tyr Pro Val Tyr Asp Ala Ala Gln

115	120	125
Arg Asp Lys Ser Leu Ala Asp Phe Gln Leu Val Ser Tyr Val Leu Ala		
130	135	140
Glu Cys Ser Thr Val Asp Glu Val Lys Glu Ala Leu Ser Gln Val Arg		
145	150	155
Val Ile Asn Ile Asp Pro Arg Ser Ser Thr Val His Trp Arg Phe Thr		
165	170	175
Glu Ala Ser Gly Arg Gln Val Val Leu Glu Ile Val Asn Glu Met Met		
180	185	190
Asn Phe Tyr Asp Asn Pro Leu Gly Val Leu Thr Asn Ser Pro Gly Leu		
195	200	205
Glu Trp His Trp Thr Asn Leu Asn Asn Tyr Ile Asn Leu Gln Pro Gly		
210	215	220
Thr Leu Pro Glu His Asn Phe Gly Pro Leu Glu Pro Lys Ser Phe Gly		
225	230	235
His Gly Ser Gly Leu Leu Gly Leu Pro Gly Asp Phe Thr Pro Pro Ser		
245	250	255
Arg Phe Val Arg Ala Thr Phe Phe Gln Leu Thr Ala Pro Gln Gln Pro		
260	265	270
Asp Ala Lys Gly Ser Val Phe Gln Ala Phe His Ile Leu Asn Asn Phe		
275	280	285
Asp Ile Pro Thr Gly Ser Glu Gln Pro Trp Gly Lys Ala Ser Ala Asn		
290	295	300
Val Pro Ser Ala Thr Gln Phe Thr Val Ala Cys Asp Ile Arg Asp Gln		
305	310	315
Lys Val Tyr Tyr Arg Thr Met Tyr Asn Ser Asn Ile Arg Cys Ile Asp		
325	330	335
Leu Lys Thr Ile Asn Phe Asp Asn Val Lys Tyr Gln Ala Asp Pro Leu		
340	345	350
Asp Glu Thr Lys Glu Gln Pro Val Glu Met Lys Val Ile Lys		
355	360	365

&lt;210&gt; 6700

&lt;211&gt; 62

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6700

Lys Val Thr Lys Leu Asn Gln Ile Ala Leu Leu Tyr Ile Pro Thr Leu		
1	5	10
Cys Gly Leu Tyr Thr Ser Phe Val Ala Phe Val Val Leu Gln His Ser		
20	25	30
Gln Ser Ala Asn His Arg Thr Val Tyr Met Ala Asn Gly Lys Glu Asn		
35	40	45
Val Lys Arg Asn Arg Met Lys Gly Ser Asp Lys Thr Lys Tyr		
50	55	60

&lt;210&gt; 6701

&lt;211&gt; 141

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6701

Leu Asn Lys Lys Lys Leu Ser Phe Leu Phe Leu Lys Val Ile Ile Thr		
1	5	10
Glu Ala Ile Lys Gln Leu Phe Ser Ser His Thr Phe Gln Thr Leu Ser		
20	25	30
Leu Glu Ser Arg Thr Leu Leu Asp Glu Tyr Asn Phe Thr Lys Ser Met		
35	40	45

Ile	Ala	Asn	Leu	Leu	Asp	Lys	Gln	Glu	Lys	Leu	Tyr	Leu	Val	Pro	Ser
50						55					60				
Thr	Lys	Lys	Glu	Asn	Glu	Leu	Leu	Ala	Gly	Ile	Ile	Leu	Asn	Asp	Glu
65					70					75					80
Ile	Ile	Tyr	Leu	Leu	Lys	Phe	Ser	Lys	Ala	Ser	Asp	Asn	Ile	Tyr	Thr
				85					90					95	
Leu	Tyr	Asn	Glu	Thr	Asn	Glu	Pro	Ile	Cys	Asp	Val	Lys	Tyr	Asp	Phe
			100					105					110		
Glu	Lys	Gln	Asn	Ile	Val	Ile	Ile	Ser	Asn	Tyr	Gly	Asn	Asp	Ala	Ile
		115					120					125			
Pro	Pro	Thr	Thr	Gln	Val	Gly	Thr	Val	Leu	Phe	Val	Ile			
	130					135					140				

&lt;210&gt; 6702

&lt;211&gt; 271

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6702

Ser	Arg	Arg	Cys	Lys	Arg	Met	Lys	Thr	Ile	Thr	Thr	Ala	Cys	Val	Asn
1				5					10					15	
His	Lys	Gly	Gly	Val	Ala	Lys	Thr	Thr	Ser	Leu	Leu	Asn	Leu	Ala	Ala
			20					25					30		
Gly	Ile	Ala	Arg	Met	Tyr	Lys	Lys	Arg	Val	Cys	Ile	Ile	Asp	Ala	Asp
		35				40					45				
Pro	Gln	Ala	Asn	Thr	Thr	Met	Ala	Ala	Phe	Gly	Glu	Glu	Met	Ala	Ser
		50				55					60				
Leu	Pro	Arg	Glu	Val	Leu	Leu	Glu	Ser	Ala	Leu	Gln	Asp	Cys	Met	Gln
65					70				75						80
Asp	Thr	Pro	Pro	Glu	Leu	Lys	Pro	Gln	Lys	Trp	Leu	Glu	Lys	Val	Asp
				85				90						95	
Ile	Leu	Pro	Ala	Ser	Leu	Asp	Leu	Ala	Ala	Thr	Glu	Val	Ile	Met	Tyr
			100					105					110		
Thr	Thr	Pro	Gly	Arg	Glu	Phe	Leu	Phe	Arg	Glu	Ile	Val	Lys	Gly	Leu
		115					120					125			
Glu	Glu	Lys	Tyr	Asp	His	Ile	Leu	Ile	Asp	Cys	Pro	Pro	Ser	Leu	Gly
	130					135					140				
Ile	Ile	Thr	Gln	Asn	Ala	Leu	Met	Ala	Ser	Asp	Tyr	Val	Ile	Ile	Pro
145				150					155						160
Thr	Asp	Gly	Asn	Tyr	Phe	Ala	Met	Lys	Gly	Ile	Glu	Lys	Ile	His	Tyr
			165						170					175	
Ile	Ile	Gly	Leu	Leu	Lys	Arg	Lys	Leu	Gly	Ala	Glu	Val	Arg	Ile	Leu
		180						185					190		
Gly	Tyr	Phe	Met	Thr	Lys	Tyr	Asn	Ala	Arg	Arg	Lys	Leu	Asp	Met	Asp
		195					200					205			
Ile	Arg	Glu	Ser	Leu	Val	Arg	Ser	Leu	Gly	Asp	Gly	Val	Phe	Glu	Thr
	210					215					220				
Val	Ile	Arg	Ser	Asn	Val	Ala	Leu	Gly	Glu	Ala	Gln	Tyr	Lys	Ala	Gln
225				230					235						240
Ser	Ile	Phe	Asp	Tyr	Ala	Pro	Ser	Ser	Asn	Gly	Ala	Asp	Asp	Tyr	Arg
			245						250					255	
Glu	Leu	Val	Lys	Glu	Phe	Leu	Gly	Arg	Ile	Lys	Lys	Ile	Asn	Lys	
			260					265					270		

&lt;210&gt; 6703

&lt;211&gt; 97

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6703

Lys Lys Gly Arg Ile Met Lys Asp Phe Thr Ser Lys Gly Ile Ser Leu  
 1 5 10 15  
 Glu Asn Met Val Gly Glu Thr Pro Gly Lys Glu Lys Gly Met Thr Gly  
 20 25 30  
 Lys Thr Ser Pro Lys Thr Asn Gln Thr Val Ala Leu Thr Glu Asp Leu  
 35 40 45  
 Lys Trp Glu Leu Arg Thr Phe Ala Ser Asp His Arg Cys Arg Gly Val  
 50 55 60  
 Lys Thr Leu Leu Glu Thr Met Ile Glu Cys Phe Val Arg Glu Asp Gly  
 65 70 75 80  
 Thr Leu Asp Arg Asp Lys Leu Glu Gly Phe Trp Arg Glu Tyr Val Glu  
 85 90 95  
 Lys

&lt;210&gt; 6704

&lt;211&gt; 522

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6704

Leu Tyr Thr Met Lys Lys Ile Ser Ile Leu Ile Ala Ala Leu Thr Leu  
 1 5 10 15  
 Ser Ile Ser Leu Lys Pro Leu Ala Ala Gln Asn Lys Lys Val Phe Ile  
 20 25 30  
 Ile Asp Lys Gln Thr Val Tyr Gln Glu Ile Asp Asn Phe Ser Ala Ser  
 35 40 45  
 Asp Ala Trp Arg Cys Ala Phe Ile Gly Lys Asn Trp Pro Gln Glu Lys  
 50 55 60  
 Lys Glu Lys Ile Ala Asp Leu Leu Phe Lys Arg Glu Phe Asp Glu Lys  
 65 70 75 80  
 Gly Asn Pro Ile Gly Met Ala Leu Thr Asn Trp Arg Val Asn Ile Gly  
 85 90 95  
 Ala Gly Ser Tyr Glu Asn Arg Glu Ala Lys Glu Val Asp Asn Ser Trp  
 100 105 110  
 Asn Arg Thr Glu Cys Phe Leu Ser Pro Asp Gly Lys Tyr Asp Phe Thr  
 115 120 125  
 Lys Gln Ala Gly Gln Gln Trp Phe Met Lys Ala Ala Arg Glu Arg Gly  
 130 135 140  
 Met Asn Asn Phe Leu Phe Thr Asn Ser Ala Pro Tyr Phe Met Thr  
 145 150 155 160  
 Arg Ser Ala Ser Thr Val Ser Thr Asp Gln Asp Cys Ile Asn Leu Gln  
 165 170 175  
 Asn Asp Lys Phe Asp Asp Phe Ala Arg Phe Leu Val Lys Ser Ala Gln  
 180 185 190  
 His Phe Arg Glu Gln Gly Phe His Val Asn Tyr Ile Ser Pro Asn Asn  
 195 200 205  
 Glu Pro Asn Gly Gln Trp His Ala Asn Ser Phe Gln Glu Gly Ser Phe  
 210 215 220  
 Ala Thr Lys Ala Asp Leu Tyr Arg Met Val Glu Glu Leu Asp Lys Ala  
 225 230 235 240  
 Ile Ser Glu Ala Gln Ile Asp Thr Lys Ile Leu Ile Pro Glu Val Gly  
 245 250 255  
 Asp Met Lys Tyr Leu Phe Glu Ile Asp Ser Ile Ala Lys Ile Pro Asp  
 260 265 270  
 Asp Ile Ile His Ser Met Phe Tyr Lys Asp Gly Gln Tyr Ser Val Leu  
 275 280 285  
 Lys Phe Lys Asn Leu Phe Asn Cys Val Ala Ala His Asp Tyr Trp Ser

290	295	300
Ala Tyr Pro Ala Thr Leu	Leu Val Asp Ile Arg Asn Arg Ile His Lys	
305	310	315
Glu Leu Ser Ala Asn Gly His Asn Thr Lys Phe Trp Ala Ser Glu Tyr		320
	325	330
Cys Ile Leu Glu Lys Asn Glu Glu Ile Thr Met Pro Ala Ser Pro Glu		335
	340	345
Arg Ser Ile Asn Leu Gly Leu Tyr Val Ala Arg Ile Ile His Asn Asp		350
	355	360
Leu Thr Leu Ala Asn Ala Ser Ala Trp Gln Trp Trp Thr Ala Val Ser		365
	370	375
Leu Gly Glu Asp Val Pro Ile Gln Leu Leu Pro Leu Glu Gly Ser Asn		380
385	390	395
Gly Leu Ser Leu Gln Tyr Asp Gly Glu Ile Ser Thr Thr Lys Met Leu		400
	405	410
Trp Thr Thr Ala Asn Tyr Ser Phe Phe Val Arg Pro Gly Met Lys Arg		415
	420	425
Ile Ala Val Lys Pro Thr Tyr Lys Val Ser Asp Leu Glu Ala Ala Thr		430
	435	440
Ser Leu Met Ile Ser Ser Tyr Thr Asp Gly Lys Glu Val Val Thr Val		445
	450	455
Ala Ile Asn Tyr Ser Lys Glu Asn Gln Val Ile Ser Leu Asn Cys Asp		460
465	470	475
His Ala Gln Lys Gly Lys Val Tyr Leu Thr Thr Ile Asp Lys Asn Leu		480
	485	490
Arg Tyr Met Gly Glu Gln Pro Leu Lys Lys Leu Gln Leu Pro Ala Arg		495
	500	505
Ser Val Ala Thr Ile Val Val Glu Asp Asn		510
	515	520

&lt;210&gt; 6705

&lt;211&gt; 73

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6705

Ser Val Phe Val Ala Ser Met Lys Arg Gln Gly Val Glu Val His Phe	
1	5
Arg His Met Glu Gln Ser Asn Lys Leu Gln Asp Ile Val Phe Thr Met	
	20
Asp Ser Tyr His Phe Asn Gly Ser Lys Val Gly Arg Arg Phe Ser Tyr	
	35
Ser Lys Phe Gly Thr Thr Leu Phe Ser Trp Ala Val Pro Pro Leu Phe	
	50
Ala Ser Gly Ser Leu Cys Cys Arg Ile	
65	70

&lt;210&gt; 6706

&lt;211&gt; 422

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6706

Lys Thr Lys Val Arg Phe Leu Arg Ala Trp Arg Tyr Tyr Met Met Val	
1	5
Thr Ala Tyr Gly Asp Ile Pro Leu Val Thr Glu Val Val Pro Ser Leu	
	20
Glu Asp Ala Lys Leu Pro Ala Asn Pro Glu Thr Asp Val Val Glu Phe	
	35
	40
	45

Ile Leu Asp Glu Leu Asn Asp Ile Thr Lys Asp Gly Ala Leu Asp Val  
 50 55 60  
 Ser Pro Lys Gln Lys Gly Arg Ile Thr Arg Gly Ala Ala Leu Ala Leu  
 65 70 75 80  
 Lys Val Arg Leu Cys Leu Phe Tyr Lys Lys Tyr Asp Glu Val Ile Asp  
 85 90 95  
 Ala Ala Asn Glu Ile Asn Ser Leu Gly Val Tyr Asn Leu Tyr Gln Glu  
 100 105 110  
 Gly Glu Val Pro Tyr Ser Glu Leu Phe Lys Glu Ala Asn Glu Asp Asn  
 115 120 125  
 Cys Glu Ile Ile Leu Ala Val Lys Lys Val Met Asn Asp Tyr Lys Asn  
 130 135 140  
 Gln Thr Ile Ile Glu Phe Cys Asn Val Ile Asp Gly Gly Trp Ser Ala  
 145 150 155 160  
 Phe Val Pro Ile Gln Ser Leu Ile Asp Ala Tyr Glu Met Lys Asp Gly  
 165 170 175  
 Leu Thr Ile Glu Glu Ala Gln Ala Lys Gly Glu Tyr Asn Pro Glu His  
 180 185 190  
 Pro Tyr Lys Asp Arg Asp Pro Arg Phe Tyr Ala Thr Ile Leu Tyr Ser  
 195 200 205  
 Gly Ala Asp Trp Met Asp Asn Lys Gly Arg Lys Arg Ile Tyr Asn Thr  
 210 215 220  
 Leu Asp Arg Asn Ile Asn Gly Glu Pro Asn Lys Asp His Arg Leu Asp  
 225 230 235 240  
 Ser Arg Asn Ala Ser Gln Thr Ser Tyr Ser Ile Cys Lys Tyr Met Lys  
 245 250 255  
 Pro Leu Thr Gln Tyr Ser Asp Ile Asn Asn Thr Gly Leu Asp Met Ile  
 260 265 270  
 Val Phe Arg Tyr Ala Glu Ile Leu Leu Ser Lys Ala Glu Ala Met Ile  
 275 280 285  
 Glu Lys Asn Thr Asp Leu Ser Gly Ala Thr Asp Leu Ile Asp Leu Ile  
 290 295 300  
 Arg Glu Arg Ala Gly Met Pro Lys Val Asp Arg Ala Lys Tyr Asn Thr  
 305 310 315 320  
 Gln Ala Lys Leu Arg Glu Leu Leu Arg Arg Glu Arg Arg Val Glu Phe  
 325 330 335  
 Ala Phe Glu Gly Leu Arg Arg Asp Asp Ile Ile Arg Trp Asp Ile Ala  
 340 345 350  
 Lys Asp Val Leu Asn Gly Pro Ile Tyr Ala Ser Asn Gln Gly Thr Val  
 355 360 365  
 Asp Met Asp Thr Ser Ile Pro Gln Glu Glu Arg Ala Thr Ile Phe Gln  
 370 375 380  
 Gly Glu Lys Asn Gln Val Val Leu Glu Ile Arg Lys Phe Arg Asn Arg  
 385 390 395 400  
 Tyr Met Pro Ile Pro Gln Ala Glu Leu Asp Lys Asn Pro Asn Leu Lys  
 405 410 415  
 Gln Thr Asn Phe Lys Ile  
 420

&lt;210&gt; 6707

&lt;211&gt; 81

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6707

Pro Val Leu Ser Leu His Leu Cys Ile Tyr Tyr Ser Phe Ser Tyr Ser  
 1 5 10 15  
 Lys Tyr His Ser Val Phe Pro Lys Asp Thr Asn His Ile Lys Ile Pro  
 20 25 30



Asp Ser Arg His Gly His Arg Gly Gly Ile Asn Lys Trp Thr Tyr Leu  
 35 40 45  
 Phe Ile Lys Ser Ser Thr Arg Pro Met Ala Tyr Gln Pro Asp Gly Asp  
 50 55 60  
 Arg Gly Gln Asn Leu Asn Pro Ile Leu Asn Val Gly Ala Ala Ser Thr  
 65 70 75 80  
 Leu

&lt;210&gt; 6708

&lt;211&gt; 152

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6708

Ile Asn Lys Ser Ile Tyr Leu Tyr Leu Pro Gly Val Arg Asp Gly Cys  
 1 5 10 15  
 Arg Gly Phe Leu Cys Asp Trp Tyr Leu Trp Glu Arg Leu Asn Gly Ile  
 20 25 30  
 Trp Asn Met Lys Lys Ser Asn Ile Tyr Ile Gly Glu Val Ile Lys Gln  
 35 40 45  
 Val Ile Ala Glu Lys Gln Val Thr Lys Ala Glu Leu Ala Arg Arg Leu  
 50 55 60  
 Gly Val Lys Pro Gln Ser Val Asp Tyr Leu Leu Thr Arg Lys Ser Ile  
 65 70 75 80  
 Asp Thr Asp Thr Leu Tyr Ser Leu Ser Leu Ala Leu Asp Tyr Asp Phe  
 85 90 95  
 Ala Val Leu Tyr Ser Ile Lys Lys Glu His Ala Leu Ala Thr Asp Glu  
 100 105 110  
 Glu Ser Pro Phe Lys Val Gly Asn Ala Lys Ile Ser Leu Glu Ile Glu  
 115 120 125  
 Leu Arg Pro Asp Glu Met Leu Lys Leu Asn Leu Lys Gln Lys Ile Ala  
 130 135 140  
 Asp Leu Leu Glu Gly Lys Gly Lys  
 145 150

&lt;210&gt; 6709

&lt;211&gt; 749

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6709

Arg Arg Tyr Leu Pro Pro Ala Ile Asn Phe Val Ser Asn Cys Ile Thr  
 1 5 10 15  
 Ile Asp Thr Lys Leu Leu Ser Glu Ala Asp Thr Gly Ser Gln Leu His  
 20 25 30  
 Gly Lys Arg Thr Asn Ile Thr Ala Arg His Pro Met Thr Val Ile Arg  
 35 40 45  
 Cys Arg Ile Phe Phe Val His Gln Phe Gly Pro Gly Asn Ala Ser Phe  
 50 55 60  
 Ser Pro Gly Leu Ile Gln Glu Ile Asp Asn Arg Gly Thr Gln Arg Lys  
 65 70 75 80  
 Met Leu Val His Arg Pro Val Asp Thr Ser Glu Gly Phe Pro Ala Ser  
 85 90 95  
 Val Glu Ile Val Ser Ile Phe Asn Val Gly Ile Arg Leu Ala Glu Val  
 100 105 110  
 Ala Glu Ala Gly Pro Asp Ser Glu Ile Ile Arg Asp Val Ile Ala Gly  
 115 120 125  
 Ile Gln Phe Asp Lys His Phe Arg Asn Leu Arg His Asn Ile Pro Cys

130	135	140
Gly Ile Asp Leu Pro His Arg Thr Val Phe Lys Gly His Thr Arg Phe		
145	150	155
Ile Leu Leu Val Ser Arg Thr Leu Ile Ser Glu Glu Glu Val Glu Val		
	165	170
Glu Ala Leu Lys Arg Leu Asp His Cys Ile Arg Arg Pro Ala Asp Gly		
	180	185
Leu Asp Val Ile Thr Gln Arg Gly Glu Asn Leu Ser Leu Val Ile		
	195	200
Arg Ile Asn Gln Val Gln Cys Arg Val Val Ile Arg Leu Arg Asp Ile		
	210	215
Arg Glu Gln Arg Gly Gln Thr Asp Pro Ile Gly Val Ile Ile Asp Pro		
225	230	235
Gly Thr Ser Gln Gly Asn Arg Asp Phe Ile Gly Ile Gly His Ser Gly		
	245	250
Arg Cys Lys Val Arg Gln Ala Gly Thr Leu Cys Val Val Ser Glu Ile		
	260	265
Gly Gly Lys Thr Lys Phe Thr Gly Gln Leu Ile Ser Ser Gly Gly Ser		
	275	280
Lys Gly His Val His Pro Val Val Val Glu Lys Thr Gly Ser Asp Pro		
	290	295
Asp Ser Phe Ile Gly His Ser Ser Gln Val Ile Arg Lys Thr Ala		
305	310	315
Tyr Gly Ile Pro Phe Gly Ile Val Tyr Ser Arg Ile Phe Thr Phe Gln		
	325	330
Val Leu Pro Phe Gln Thr Gly Ala Ile Ile His Val Pro Leu Gly Arg		
	340	345
Asn Ile Pro Ile Val Ser Gly Ile Asn Ser Gln Phe Val Phe Met Ser		
	355	360
Phe Ile Ile Phe Arg Ser Ile Leu Ile Glu Ile Val Ile Tyr Thr Ile		
	370	375
Cys Ile Pro Phe Thr Tyr Gln Thr Phe Gly Ile Leu Leu Tyr Arg Met		
385	390	395
Ile Val His Gly Ser Ile Arg Ser Ile Ile His Leu Ile Val Pro Phe		
	405	410
Val His Ser Asp Ser Pro Gly Arg Ile Thr Ile Gly Thr Gly Glu Phe		
	420	425
Gly Gly Ser Glu Lys Leu Ile Asp Phe Ser Pro Val Lys Ala Arg His		
	435	440
Ala Ala Leu His Ile Ser Phe Ile Arg Phe Gln Cys Thr Val Tyr Arg		
	450	455
Phe Gln Val Val Thr Gly Arg Gly Ile Phe Leu Phe His Gly His Trp		
465	470	475
Ser Leu Val Asp Ile Arg Ala Gln Gly Met Ile Ile Leu Gln Ile Asp		
	485	490
Leu Pro Val Gln Ala Ile Ile Pro Gly Val Arg Val Glu Gln Gly Gln		
	500	505
Leu Val Ser Phe Ile Gln Ser Gly Ile Ile Lys Ile Gly Leu Leu Gln		
	515	520
Phe Thr Arg Thr His Val Thr Val Gly His Phe Ala Arg Cys Arg Gln		
	530	535
Ile Gly Thr Cys Ser Glu Ala Glu Ser Arg Tyr Phe Phe His Ala Thr		
545	550	555
Val Ala Tyr Ile Asp Glu Arg Gly Gly Ser His Phe Val Ala Trp Pro		
	565	570
Thr Ala Val Ala Val Val Ile Asp Ser Arg Gln Leu Ser Ala Ser Phe		
	580	585
Ile Ile Ile Leu Gly Gln Gly Cys Phe Ile Asp Leu Ser Thr Val Leu		
	595	600
		605

130 135 140  
 145 150 155  
 165 170 175  
 180 185 190  
 195 200 205  
 210 215 220  
 225 230 235  
 245 250 255  
 260 265 270  
 275 280 285  
 290 295 300  
 305 310 315  
 325 330 335  
 340 345 350  
 355 360 365  
 370 375 380  
 385 390 395  
 405 410 415  
 420 425 430  
 435 440 445  
 450 455 460  
 465 470 475  
 485 490 495  
 500 505 510  
 515 520 525  
 530 535 540  
 545 550 555  
 565 570 575  
 580 585 590  
 595 600 605

Ile Arg Cys Lys Thr Gln Phe Glu Thr Ala Arg Ile Lys Ile Leu Val  
 610 615 620  
 Asn Ala Ser Thr Val Glu Pro Ser Phe Pro His Thr Thr Ala Asp Ile  
 625 630 635 640  
 Ser Ile Glu Leu Leu Leu Ala Lys Val Ile Gly Thr Ile Ile Asp Asp  
 645 650 655  
 Ser Thr Lys Leu Phe Cys Ser Gln Leu Gly Lys Arg Val Tyr Ser Ile  
 660 665 670  
 Thr Asp Ile Ala Gly Ser Asn Gly Gly Phe Gly Asp Phe Glu Gln Pro  
 675 680 685  
 Asp Val Pro Glu Thr Ala Val Ser Thr Pro Val Arg Ile Tyr Ile Met  
 690 695 700  
 Arg Ile Arg Gly Ile Asp Tyr Gly Glu Ser Val Phe Glu Tyr Ile Tyr  
 705 710 715 720  
 Val Ser Thr Trp Gln Ala Asp Arg Asp Phe Ala Gly Thr Ile Gly Ala  
 725 730 735  
 Arg Ser Val Gln His Asn Ile Thr Ile Ala Phe Phe Leu  
 740 745

<210> 6710  
 <211> 136  
 <212> PRT  
 <213> B.fragilis

<400> 6710  
 Val Lys Thr Glu Tyr Asn Asp Ala Leu Ala Ala Val Ser Gly Asp Asn  
 1 5 10 15  
 Ala Thr Ala Tyr Ala Asn Leu Leu Thr Ala Met Asp Asn Ala Val Lys  
 20 25 30  
 Ala Arg Val Glu Thr Leu Ile Ala Tyr Tyr Lys Ala Asp His Asn Tyr  
 35 40 45  
 Ser Val Gln Asn Thr Leu Ala Tyr Thr Leu Gln Thr Ile Ala Asp Gly  
 50 55 60  
 Leu Ala Asp Tyr Asp Gln Leu Ile Leu Val Gln Lys Gln Ala Ile Ala  
 65 70 75 80  
 Ala Ala Asp Glu Asn Ile Ala Asn Ala Ala Ser Val Val Ser Lys Glu  
 85 90 95  
 Gln Ala Ile Ala Asn Gln Glu Lys Thr Ile Ala Asp Leu Glu Asn Ser  
 100 105 110  
 Leu Ala Val Asn Glu Pro Ile Tyr Asn Asp Tyr Leu Ala Gln Ile Lys  
 115 120 125  
 Ala Leu Val Gly Asp Ser Ala Glu  
 130 135

<210> 6711  
 <211> 261  
 <212> PRT  
 <213> B.fragilis

<400> 6711  
 Lys Lys Tyr Arg Met Lys Ile Lys Arg Leu Leu Val Leu Ala Val Leu  
 1 5 10 15  
 Pro Met Leu Cys Leu Ala Val Asn Ala Gln Asn Ser Ser Lys Asp Asn  
 20 25 30  
 Thr Pro Lys Lys Gly Asp Phe Thr Val Ala Ala Thr Val Gly Tyr Asn  
 35 40 45  
 Ser Tyr Thr Ser Val Thr Ala Pro Ser Gly Leu Leu Thr Asp Tyr Glu  
 50 55 60  
 Val Arg Ala Leu Ser Thr Asn Trp Ala Asp Lys Lys Leu Met Val Gly

65					70					75				80	
Phe	Glu	Gly	Gly	Trp	Phe	Phe	Lys	Asp	Gln	Trp	Lys	Leu	Asn	Leu	Gly
				85					90					95	
Gly	Gly	Val	Ser	Phe	Thr	Asn	Asn	Pro	Gly	Tyr	Pro	Ala	Val	Pro	Gly
			100					105						110	
Thr	Ile	Asp	Asp	Ser	Asn	Lys	Asn	Asn	Ser	Ala	Asp	Glu	Asn	Met	Gly
		115					120					125			
Glu	Ile	Pro	Asn	Tyr	Arg	Ala	Val	Ala	Asp	Ala	Gln	Ser	Phe	Ala	Tyr
		130				135					140				
Asn	Val	Ser	Ala	Gly	Val	Asp	Arg	Tyr	Phe	Asn	Ile	Lys	Arg	Val	Pro
145					150					155					160
Asn	Leu	Met	Trp	Tyr	Thr	Gly	Ile	Arg	Val	Arg	Phe	Ala	Tyr	Gly	Glu
			165						170					175	
Asn	Glu	Met	Lys	Tyr	Asp	Glu	Glu	Thr	Ser	Met	Gly	Lys	Ser	Ile	Ala
		180						185					190		
Glu	Ser	Trp	Asn	Leu	Arg	Gly	Ala	Leu	Thr	Ile	Gly	Val	Asp	Tyr	Phe
		195				200						205			
Val	Phe	Pro	Ala	Leu	Tyr	Ile	Gly	Ala	Gln	Ile	Asp	Pro	Phe	Ala	Tyr
	210					215					220				
Thr	Tyr	Asn	Lys	Thr	Thr	Tyr	Asn	Pro	Gln	Ala	Gly	Leu	Gly	Asp	Leu
225					230				235						240
Ser	Ala	Asp	Ser	His	Asn	Tyr	Ser	Val	Leu	Ala	Ala	Pro	Thr	Phe	Lys
			245						250					255	
Ile	Gly	Phe	Lys	Phe											
			260												

&lt;210&gt; 6712

&lt;211&gt; 265

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6712

Lys	Tyr	His	Val	Ile	Met	Lys	Thr	Thr	Phe	Met	Asn	Val	Ser	Arg	Gly
1				5					10					15	
Val	Ile	Gly	Ala	Leu	Ala	Phe	Ser	Leu	Gly	Ile	Ser	Ser	Cys	Gln	Ser
		20						25					30		
Ser	Gln	Ser	Lys	Met	Thr	Phe	Glu	Gln	Glu	Gly	Asp	Ser	Leu	Thr	Val
		35					40					45			
Ile	His	Ile	Thr	Asn	Pro	Thr	Gln	Tyr	Leu	Leu	Leu	Pro	Val	Glu	Glu
	50					55					60				
Lys	Thr	Pro	Glu	Ala	Gln	Val	Cys	Ile	Ala	Ser	Asp	Ser	Val	Pro	Val
65				70					75					80	
Asp	Met	Asp	Val	Arg	Leu	Ser	Arg	Glu	Lys	Val	Asp	Tyr	Phe	Val	Pro
			85						90					95	
Phe	Ala	Leu	Pro	Lys	Gly	Glu	Lys	Glu	Val	Ala	Val	Arg	Ile	Arg	His
		100						105					110		
Leu	Pro	Lys	Glu	Ala	Leu	Cys	Trp	Lys	Glu	Leu	Lys	Leu	Ser	Asp	Thr
		115					120					125			
Phe	Asp	Thr	Thr	Asn	Thr	Asp	Gln	Tyr	Arg	Pro	Leu	Tyr	His	His	Thr
	130					135					140				
Pro	Leu	Tyr	Gly	Trp	Met	Asn	Asp	Ala	Asn	Gly	Leu	Val	Tyr	Lys	Asp
145				150					155						160
Gly	Glu	Tyr	His	Leu	Phe	Tyr	Gln	Tyr	Asn	Pro	Tyr	Gly	Ser	Met	Trp
			165						170					175	
Gly	Asn	Met	His	Trp	Gly	His	Ser	Val	Ser	Lys	Asp	Leu	Val	His	Trp
		180						185					190		
Glu	His	Leu	Glu	Pro	Ala	Leu	Ala	Arg	Asp	Thr	Leu	Gly	His	Ile	Phe
	195						200					205			
Ser	Gly	Ser	Ser	Val	Val	Asp	Asp	Ala	Asn	Thr	Ala	Gly	Tyr	Gly	Ala

210	215	220
Gly Ala Ile Val Ala Phe Tyr Thr Ser Ala Ser Asp Lys Asn Gly Gln		
225	230	235
Ile Gln Cys Met Ala Tyr Ser Thr Asp Asn Gly Arg Thr Phe Thr Lys		
	245	250
Tyr Glu Lys Asn Pro Ser Ser Pro Arg		255
	260	265

&lt;210&gt; 6713

&lt;211&gt; 790

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6713

Asn Lys Ser Phe Ser Trp Glu Met Gly Phe Arg Val Pro Leu Arg His		
1	5	10
Gln Asn Asn Leu Asn Gln Leu Lys Asn Leu Ser Thr Met Met Lys Asn		
	20	25
Gln Lys Arg Ala Val Cys Leu Leu Ala Cys Leu Leu Ile Ala Gly Phe		
	35	40
Thr Ala Ala Gln Glu Lys Lys Glu Ser Ala Gln Thr Ala Ser Gly Ser		
	50	55
Lys Glu Glu Gly Asn Arg Asn Val Met Leu Asn Ala Ser Ser Ala Asn		
65	70	75
Gly Pro Arg Glu Ile Ser Ile Gly Leu Pro Gly Gly Asp Val Asn Val		
	85	90
Leu Glu Asn Gly Leu Pro Val Val Tyr Thr Ser Asn Pro His Asn Val		
	100	105
Asn Thr His Trp Arg Gly Asp Ser Ser Leu Gly His Val Gly Leu Leu		
	115	120
Lys Ile Ser Glu Thr Ala Ile Thr Thr Gly Asn Ile Gly Tyr Ala Val		
	130	135
Asn Ser Phe Thr Gln Leu Gly Thr Glu Lys Phe Arg Gly Ile Val Asn		
145	150	155
Tyr Ser Thr Asn His Phe Gly Lys Gln Gln Phe Asp Ala Asn Ile Ser		
	165	170
Gly Gly Met Gly Lys Gly Trp Phe Tyr Ser Gly Ser Val Tyr Gln Asn		
	180	185
Phe Asp Pro Gly Ser Phe Lys Leu Arg Phe Thr Ser Asn Gln Asp Arg		
	195	200
Thr Gln Ile Tyr Lys Ala Ala Leu Thr Lys Asn Tyr Asn Glu Gly Arg		
	210	215
Gly Gln Leu Ser Ala Ile Tyr His Tyr Ser Asn Ser Arg Trp Pro Ser		
225	230	235
Asn Glu Val Thr Ser Ala Pro Phe Ile Tyr Val Gly Asp Gly Ser Val		
	245	250
Lys Glu Ile Pro Gly Phe Ser Leu Gly Thr Ser Ser Tyr Leu Pro Thr		
	260	265
Thr Gly Glu Met Ala Tyr Arg Asp Met Arg Thr Gly Glu Leu Lys Glu		
	275	280
Thr Asn Leu Tyr Asp Ala Thr Leu Asn Lys Gly Asn Gln Leu Thr Leu		
	290	295
Leu Asn Thr Tyr Thr Trp Asp Asn Gly Leu Asn Trp Lys Ile Asn Leu		
305	310	315
Lys Tyr Asp His Ala Leu Gly Ser Tyr Val Tyr Gln Thr Pro Met Ala		
	325	330
Met Glu Gln Lys Asp Ala Ser Ala Gly Tyr Tyr Leu Lys Ala Val Asp		
	340	345
Gly Thr Leu Lys Pro Tyr Glu Gly Tyr Val Gln Ser Arg Met Ser Cys		

355	360	365
Leu Asn Arg Gly Lys Ile Asp Glu Phe Phe Ala Thr Ser Glu Leu Ser		
370	375	380
Arg Ser Tyr Arg Asn Thr Thr Trp Arg Ile Gly Val Asn Glu Trp His		
385	390	395
Tyr Lys Val Asp Tyr Ala Ser Asn Thr Thr Met Tyr Asp His Thr Val		
405	410	415
Glu Glu Tyr Pro Glu Arg Leu Val Arg Glu Gly Asn Thr Asp Gly Val		
420	425	430
Tyr Tyr Asp Phe Asn Lys Asn Ala Ser Glu Tyr Tyr Lys Gly His Glu		
435	440	445
Asn Lys Leu Ala Val Tyr Ala Thr His Asp Trp Asp Ile Ser Pro Lys		
450	455	460
Trp Asn Val Tyr Tyr Gly Ala Arg Leu Glu Trp Gln His Leu Glu Gly		
465	470	475
Glu Asn Ala Ala Val Tyr Asp Ala Glu Gly Asn Ala Val Gly Arg Phe		
485	490	495
Pro Asp Tyr Tyr Leu Gly Ala Val Ser Asp Lys Gly Val Arg Ile Thr		
500	505	510
Pro Arg Leu Phe Asp Tyr Asp Trp Met Asn Met Ala Phe Thr Ala Ala		
515	520	525
Ala Thr Tyr Lys Leu Thr Arg Glu Phe Gly Phe Thr Ala Asp Phe Thr		
530	535	540
Tyr Asn Thr Gln Arg Pro Gly Leu Ser Asn Phe Ala Pro Ala Thr Met		
545	550	555
Pro Asn Thr Asp Lys Ile Ser Val Pro Leu Gly Arg Ala Gly Ile Tyr		
565	570	575
Tyr Asn Thr Asp Trp Ile Ser Leu Thr Ser Leu Phe Ser Tyr Ile Ser		
580	585	590
Lys Thr Asn Asn Asn Ser Thr Leu Asn Leu Ile Asn Pro Asn Asp Gln		
595	600	605
Thr Glu Ile Leu Ala Ala Pro Leu Ser Tyr Asp Ile Gln Thr Ile Gly		
610	615	620
Trp Thr Thr Asp Ala Val Ile Lys Pro Phe Lys Gly Phe Asn Phe His		
625	630	635
Phe Leu Phe Thr Tyr Gln Ser Pro Thr Tyr Lys Lys Tyr Glu Thr Ser		
645	650	655
Val Thr Phe Lys Asp Gly Thr Val Gly Glu Ile Asp Ala Thr Gly Asn		
660	665	670
Ile Val Thr Glu Ile Pro Lys Val Leu Val Glu Leu Asp Pro Ser Tyr		
675	680	685
Asn Ile Thr Asn Asp Leu Arg Val Trp Ala Ser Phe Arg Tyr Phe Ser		
690	695	700
Lys Thr Tyr Ala Asn Ile Lys Asn Ala Tyr Tyr Phe Asn Gly Arg Trp		
705	710	715
Glu Thr Phe Gly Gly Ile Asn Trp Thr Val Asn Lys His Leu Ala Leu		
725	730	735
Ser Ala Thr Val Ile Asn Phe Leu Asn Gln Thr Gly Ala Lys Gly Ser		
740	745	750
Ile Ala Gly Thr Glu Leu Val Asp Lys Lys Asp Ala Ala Ser Tyr Asn		
755	760	765
Gly His Trp Met Ala Gly Ser Tyr Ile Arg Pro Phe Thr Val Glu Leu		
770	775	780
Ala Ala Ser Ile Arg Phe		
785	790	

&lt;210&gt; 6714

&lt;211&gt; 127

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6714

Ile	Arg	Ser	Thr	Pro	Lys	Ala	Ile	Ser	Ser	Gln	Tyr	Leu	Tyr	Gln	Ile
1				5					10					15	
Phe	Arg	Tyr	Asp	Leu	Leu	Leu	Val	Lys	Arg	Arg	Glu	Ser	Trp	Pro	His
			20					25					30		
Phe	Pro	Cys	Ser	Tyr	Tyr	Phe	Pro	Val	Val	Val	Asn	Leu	Pro	Asp	Phe
		35					40					45			
Asp	Phe	Lys	His	Gln	Leu	Pro	Ser	Leu	Asn	Tyr	Tyr	Pro	Leu	Asn	Pro
	50					55					60				
Leu	Gly	Gly	Lys	Ile	Leu	Leu	Lys	Cys	Ser	Thr	Ser	Arg	Leu	Phe	Arg
65					70					75					80
Ser	Ser	Phe	Ala	Arg	Asn	Ile	Asn	Pro	Leu	Leu	Glu	Lys	Ser	Arg	Cys
				85					90					95	
Gln	Gln	Thr	Pro	Thr	Val	Lys	Thr	Leu	Phe	Tyr	Arg	Thr	Ala	Leu	Thr
			100					105					110		
Ile	Arg	Leu	Ala	Pro	Gly	Ser	Trp	Asn	Asn	Pro	Tyr	Thr	Leu	Cys	
		115					120						125		

&lt;210&gt; 6715

&lt;211&gt; 400

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6715

Thr	Asn	Thr	Ala	Ile	Val	Met	Asn	Thr	Thr	Glu	Tyr	Leu	Gln	Thr	Trp
1				5					10					15	
Ser	Asp	Ser	Tyr	Lys	Asn	Asp	Met	Ile	Ser	Asn	Ile	Met	Pro	Phe	Trp
			20					25					30		
Met	Lys	Tyr	Gly	Trp	Asp	Arg	Lys	Asn	Gly	Gly	Val	Tyr	Thr	Cys	Val
		35					40					45			
Asp	Arg	Asp	Gly	Gln	Leu	Met	Asp	Thr	Thr	Lys	Ser	Val	Trp	Phe	Gln
	50					55					60				
Gly	Arg	Phe	Ala	Phe	Thr	Cys	Ser	Tyr	Ala	Tyr	Asn	His	Ile	Glu	Arg
65					70					75					80
Asn	Thr	Glu	Trp	Leu	Ala	Ala	Ala	Lys	Ser	Thr	Leu	Asp	Phe	Ile	Glu
				85					90					95	
Ala	His	Cys	Phe	Asp	Thr	Asp	Gly	Arg	Met	Phe	Phe	Glu	Val	Thr	Glu
			100					105					110		
Thr	Gly	Leu	Pro	Ile	Arg	Lys	Arg	Arg	Tyr	Val	Phe	Ser	Glu	Thr	Phe
		115					120					125			
Ala	Ala	Ile	Ala	Met	Ser	Glu	Tyr	Ala	Ile	Ala	Ser	Gly	Asp	His	Ser
	130					135					140				
Tyr	Ala	Val	Lys	Ala	Leu	Lys	Leu	Phe	Asn	Asp	Ile	Arg	His	Phe	Leu
145					150					155					160
Ser	Thr	Pro	Gly	Ile	Leu	Glu	Pro	Lys	Tyr	Cys	Glu	Arg	Val	Gln	Met
				165					170					175	
Lys	Gly	His	Ser	Ile	Ile	Met	Ile	Leu	Ile	Asn	Val	Ala	Ser	Arg	Ile
		180					185					190			
Arg	Ala	Ala	Ile	Asn	Asp	Pro	Val	Leu	Asp	Arg	Gln	Ile	Glu	Glu	Ser
		195					200					205			
Ile	Ala	Ile	Leu	Arg	Lys	Asp	Phe	Met	His	Pro	Glu	Phe	Lys	Ala	Leu
	210					215					220				
Leu	Glu	Thr	Val	Gly	Pro	Asn	Gly	Glu	Phe	Ile	Asp	Thr	Asn	Ala	Thr
225					230					235					240
Arg	Thr	Ile	Asn	Pro	Gly	His	Cys	Ile	Glu	Thr	Ser	Trp	Phe	Ile	Leu
				245					250					255	
Glu	Glu	Ala	Lys	Asn	Arg	Asn	Trp	Asp	Lys	Glu	Met	Val	Asp	Thr	Ala

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65  
66  
67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82  
83  
84  
85  
86  
87  
88  
89  
90  
91  
92  
93  
94  
95  
96  
97  
98  
99  
100  
101  
102  
103  
104  
105  
106  
107  
108  
109  
110  
111  
112  
113  
114  
115  
116  
117  
118  
119  
120  
121  
122  
123  
124  
125  
126  
127  
128  
129  
130  
131  
132  
133  
134  
135  
136  
137  
138  
139  
140  
141  
142  
143  
144  
145  
146  
147  
148  
149  
150  
151  
152  
153  
154  
155  
156  
157  
158  
159  
160  
161  
162  
163  
164  
165  
166  
167  
168  
169  
170  
171  
172  
173  
174  
175  
176  
177  
178  
179  
180  
181  
182  
183  
184  
185  
186  
187  
188  
189  
190  
191  
192  
193  
194  
195  
196  
197  
198  
199  
200  
201  
202  
203  
204  
205  
206  
207  
208  
209  
210  
211  
212  
213  
214  
215  
216  
217  
218  
219  
220  
221  
222  
223  
224  
225  
226  
227  
228  
229  
230  
231  
232  
233  
234  
235  
236  
237  
238  
239  
240  
241  
242  
243  
244  
245  
246  
247  
248  
249  
250  
251  
252  
253  
254  
255  
256  
257  
258  
259  
260  
261  
262  
263  
264  
265  
266  
267  
268  
269  
270  
271  
272  
273  
274  
275  
276  
277  
278  
279  
280  
281  
282  
283  
284  
285  
286  
287  
288  
289  
290  
291  
292  
293  
294  
295  
296  
297  
298  
299  
300  
301  
302  
303  
304  
305  
306  
307  
308  
309  
310  
311  
312  
313  
314  
315  
316  
317  
318  
319  
320  
321  
322  
323  
324  
325  
326  
327  
328  
329  
330  
331  
332  
333  
334  
335  
336  
337  
338  
339  
340  
341  
342  
343  
344  
345  
346  
347  
348  
349  
350  
351  
352  
353  
354  
355  
356  
357  
358  
359  
360  
361  
362  
363  
364  
365  
366  
367  
368  
369  
370  
371  
372  
373  
374  
375  
376  
377  
378  
379  
380  
381  
382  
383  
384  
385  
386  
387  
388  
389  
390  
391  
392  
393  
394  
395  
396  
397  
398  
399  
400

	260		265		270
Leu Thr Ile	Leu Asp Trp Ser	Trp Glu Trp Gly Trp	Asp Lys Glu Tyr		
	275		280		285
Gly Gly Ile	Ile Asn Phe Arg	Asp Cys Arg Asn Leu	Pro Ser Gln Asp		
	290		295		300
Tyr Ala His	Asp Met Lys Phe	Trp Trp Pro Gln Thr	Glu Ala Ile Ile		
	305		310		315
Ala Thr Leu	Tyr Ala Tyr Gln	Ala Thr Lys Asn Glu	Lys Tyr Leu Ala		
		325	330		335
Met His Lys	Gln Ile Ser Asp	Trp Thr Tyr Ala His	Phe Pro Asp Ala		
	340		345		350
Glu Phe Gly	Glu Trp Tyr Gly	Tyr Leu His Arg Asp	Gly Thr Ile Ser		
	355		360		365
Gln Pro Ala	Lys Gly Asn Leu	Phe Lys Gly Pro Phe	His Ile Pro Arg		
	370		375		380
Met Met Thr	Lys Gly Tyr Ala	Leu Cys Gln Glu	Leu Leu Ser Glu	Lys	
	385		390		400

&lt;210&gt; 6716

&lt;211&gt; 73

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6716

Arg Pro Arg	Glu Asn Asn Arg	Ser Met Gly Asn Gly	Ala Met Thr Pro		
1	5	10	15		
Ser Phe Leu	Leu Lys Val Gly	Arg Ile Glu Ile Ser	Gly Lys Gly Ile		
	20	25	30		
Val Lys Lys	Ser Pro Trp Gly	Cys Cys Gly Ser	Ile Leu Ser Asn Met		
	35	40	45		
Tyr Gln Ile	Arg Asp Phe Asn	Gly Ala Leu Leu Thr	Met Val Val Phe		
	50	55	60		
Leu Glu Thr	Val Asp Gly Arg	Tyr Ser			
	65	70			

&lt;210&gt; 6717

&lt;211&gt; 417

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6717

Pro Leu Ile	Phe Ile Met Lys	Asn Ser Lys Ile Tyr	Pro Trp Ile Val		
1	5	10	15		
Val Ala Leu	Leu Trp Gly Val	Ala Leu Leu Asn Tyr	Met Asp Arg Gln		
	20	25	30		
Met Leu Ser	Thr Met Lys Asp	Ala Met Gln Val Asp	Ile Val Glu Leu		
	35	40	45		
Gln Ser Ala	Thr Asn Phe Gly	Arg Leu Met Ala Val	Phe Leu Trp Ile		
	50	55	60		
Tyr Gly Leu	Met Ser Pro Ile	Ser Gly Met Ile Ala	Asp Arg Leu Asn		
	65	70	75		80
Arg Lys Trp	Leu Ile Val Gly	Ser Leu Phe Val Trp	Ser Phe Val Thr		
	85	90	95		
Tyr Leu Met	Gly Ile Ala Glu	Thr Phe Asn Gln Val	Phe Trp Leu Arg		
	100	105	110		
Ala Leu Met	Gly Val Ser Glu	Ala Leu Tyr Ile Pro	Ala Gly Leu Ser		
	115	120	125		
Leu Ile Ala	Asp Tyr His Thr	Glu Lys Ser Arg Ser	Leu Ala Val Gly		
	130	135	140		



Ile His Met Thr Gly Leu Tyr Thr Gly Gln Ala Ile Gly Gly Phe Gly  
 145 150 155 160  
 Ala Thr Val Ala Ala Phe Ser Trp His Thr Thr Phe His Trp Phe  
 165 170 175  
 Gly Ile Ile Gly Ile Ala Tyr Ala Leu Val Leu Val Leu Phe Leu Lys  
 180 185 190  
 Asp Lys Lys Glu His Val Lys Thr Glu Arg Leu Lys Pro Ser Ser Lys  
 195 200 205  
 Asn Gly Glu Lys Ala Gly Leu Phe Lys Gly Leu Ser Leu Leu Phe Ser  
 210 215 220  
 Asn Ile Ala Phe Trp Val Ile Leu Leu Tyr Phe Ala Ala Pro Ser Leu  
 225 230 235 240  
 Pro Gly Trp Ala Thr Lys Asn Trp Leu Pro Thr Leu Phe Ala Glu Asn  
 245 250 255  
 Leu Asp Ile Pro Met Ser Gln Ala Gly Pro Met Ser Thr Ile Thr Ile  
 260 265 270  
 Ala Leu Ser Ser Phe Ile Gly Val Ile Leu Gly Gly Thr Leu Ser Asp  
 275 280 285  
 Lys Trp Val Gln Lys Asn Ile Arg Gly Arg Val Tyr Thr Gly Ala Ile  
 290 295 300  
 Gly Leu Gly Leu Thr Ile Pro Ser Leu Leu Leu Gly Phe Gly His  
 305 310 315 320  
 Ser Phe Val Ala Val Gly Ala Gly Leu Leu Phe Gly Ile Gly Tyr  
 325 330 335  
 Gly Ile Phe Asp Ala Asn Asn Met Pro Ile Leu Cys Gln Phe Val Ser  
 340 345 350  
 Ser Lys Tyr Arg Ala Thr Ala Tyr Gly Ile Met Asn Met Thr Gly Val  
 355 360 365  
 Phe Ala Gly Ala Phe Ile Thr Asp Leu Leu Gly Lys Trp Thr Asp Gly  
 370 375 380  
 Gly Asn Leu Gly Leu Gly Phe Ala Met Leu Ala Ile Ile Val Phe Ile  
 385 390 395 400  
 Ala Leu Ala Val Gln Leu Tyr Phe Leu Arg Pro Lys Thr Asp Asn Met  
 405 410 415  
 Glu

&lt;210&gt; 6718

&lt;211&gt; 149

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6718

Thr Val Val Ile Pro Ser Phe Ala Glu Ile Lys Tyr Thr Phe Glu Ser  
 1 5 10 15  
 Met Tyr Glu Tyr Asn Gln Cys Arg Met Tyr Lys Gly Gly Lys Phe Asp  
 20 25 30  
 Met Leu His Gly Gln Asp Lys Thr Ile Leu Pro Cys Leu Ala Met Gly  
 35 40 45  
 Gly Pro Gln Gly Gly Ile Gly Gly Thr Ala Asn Tyr Asn Gly Val Asn  
 50 55 60  
 Leu Val Gly Ile Ile Glu Ala Trp Lys Ala Gly Asp Leu Glu Lys Ala  
 65 70 75 80  
 Arg Glu Leu Gln Asn Phe Ser Gln Glu Val Ile Asn Val Ile Cys His  
 85 90 95  
 Phe Arg Glu Asn Ile Val Gly Gly Lys Arg Ile Met Lys Leu Ile Gly  
 100 105 110  
 Leu Asp Leu Gly Lys Asn Arg Thr Pro Phe Gln Asn Met Thr Asp Asp  
 115 120 125

Glu Glu Val Arg Met Lys Pro Glu Pro Gln Ala Ile His Phe Phe Asp  
 130 135 140  
 Arg Cys Asn Lys Phe  
 145

<210> 6719  
 <211> 150  
 <212> PRT  
 <213> B.fragilis

<400> 6719  
 Lys Glu Met Ile Val Ser Asn Leu Gln Asn Ser Gln Arg Val Glu Gly  
 1 5 10 15  
 Leu His Pro Leu Phe Lys Thr Leu Phe Asp Tyr Val Lys Thr His Asp  
 20 25 30  
 Leu Phe His Ala Glu Leu Gly Arg Ile Glu Ile Asp Gly Asp Asn Leu  
 35 40 45  
 Phe Ile Asn Asn Val Asn Pro Glu Cys Val Ala Arg Asp Lys Gln Val  
 50 55 60  
 Leu Glu Leu His Arg Asp Tyr Ile Asp Val His Ile Leu Leu Glu Gly  
 65 70 75 80  
 Thr Glu Thr Ile Gly Trp Lys Ala Ile Glu Asp Leu Lys Asp Glu Val  
 85 90 95  
 Lys Pro Tyr Glu Ala Asn Gly Asp Cys Ala Leu Tyr Ser Asp Ala Pro  
 100 105 110  
 Thr Thr Phe Val Asp Leu Leu Pro Gly Gln Phe Met Ile Val Tyr Pro  
 115 120 125  
 Glu Asp Pro His Ala Pro Leu Ile Gly Gln Gly Lys Ile Arg Lys Leu  
 130 135 140  
 Ile Ala Lys Val Lys Leu  
 145 150

<210> 6720  
 <211> 698  
 <212> PRT  
 <213> B.fragilis

<220>  
 <221> UNSURE  
 <222> (668)  
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 6720  
 Thr Ser Leu Leu Leu Thr Gln Lys Ala Ile Leu Met Lys Lys Thr Ile  
 1 5 10 15  
 Phe Leu Ile Leu Cys Ile Leu Cys Ser Leu Gly Ala Met Ala Gln Lys  
 20 25 30  
 Lys Ser Ile Thr Gly Val Val Thr Asp Ala Ser Gly Glu Ser Val Ile  
 35 40 45  
 Gly Ala Ser Val Val Glu Val Gly Thr Thr Asn Gly Val Ile Thr Asp  
 50 55 60  
 Ile Asp Gly Lys Phe Thr Leu Ser Val Asp Pro Asn Gly Lys Ile Arg  
 65 70 75 80  
 Val Ser Tyr Ile Gly Tyr Gln Pro Gln Val Leu Asp Val Lys Gly Lys  
 85 90 95  
 Asn Ser Phe Asn Ile Lys Leu Lys Glu Asp Ser Glu Met Leu Glu Glu  
 100 105 110  
 Val Val Val Thr Gly Tyr Gly Gly Lys Gln Leu Arg Thr Lys Val Thr  
 115 120 125

Asn	Ser	Ile	Ala	Lys	Val	Lys	Asp	Glu	Ala	Leu	Lys	Val	Gly	Leu	Phe
130						135					140				
Ser	Asn	Pro	Ala	Gln	Ala	Leu	Ser	Gly	Ala	Val	Ala	Gly	Leu	Lys	Val
145					150					155					160
Thr	Gln	Ala	Ser	Gly	Ser	Pro	Gly	Ala	Ala	Pro	Lys	Val	Thr	Leu	Arg
				165					170						175
Gly	Gly	Thr	Asn	Phe	Asp	Gly	Ser	Gly	Asp	Pro	Leu	Val	Ile	Val	Asp
			180					185					190		
Gly	Gln	Leu	Arg	Asp	Gly	Met	Gln	Asp	Ile	Asn	Pro	Glu	Asp	Ile	Glu
		195					200					205			
Ser	Met	Glu	Val	Leu	Lys	Asp	Ala	Gly	Ala	Thr	Ala	Ile	Tyr	Gly	Ala
	210					215					220				
Arg	Ala	Ser	Asn	Gly	Val	Ile	Leu	Ile	Thr	Thr	Lys	Thr	Gly	Lys	Glu
225					230					235					240
Gly	Arg	Arg	Glu	Ile	Asn	Phe	Lys	Ala	Lys	Met	Gly	Leu	Ser	Tyr	Val
				245					250						255
Asn	Asn	Pro	Tyr	Asp	Phe	Leu	Gly	Ala	Lys	Asp	Tyr	Ile	Asn	Val	Leu
		260						265						270	
Arg	Thr	Gly	Tyr	Ser	Lys	Ser	Gly	Phe	Thr	Thr	Ser	Asp	Gly	Glu	Tyr
	275						280					285			
Val	Ser	Ile	Ala	Pro	Leu	Gly	Asn	Leu	Thr	Ser	Ala	Ser	Pro	Phe	Gly
	290					295					300				
Thr	Gly	Asn	Thr	Leu	Asn	Asp	Lys	Thr	Ile	Trp	Asn	Ile	Met	Asn	Lys
305					310					315					320
Thr	Ala	Asp	Asn	Ala	Tyr	Leu	Leu	Gln	Lys	Gly	Trp	Gln	Glu	Met	Pro
				325					330						335
Asp	Pro	Leu	Asp	Pro	Ser	Lys	Thr	Ile	Leu	Tyr	Lys	Asp	Thr	Asn	Pro
			340					345					350		
Ala	Asp	Tyr	Asn	Leu	Asn	Asn	Pro	Ala	Ile	Ser	Gln	Asp	Tyr	Asn	Ile
		355					360					365			
Asn	Met	Ser	Gly	Gly	Asn	Asp	Lys	Gly	Thr	Tyr	Tyr	Ala	Gly	Leu	Gly
	370					375					380				
Tyr	Asn	Arg	Gln	Glu	Gly	Leu	Pro	Ile	Lys	Thr	Phe	Tyr	Glu	Arg	Tyr
385					390					395					400
Ser	Phe	Val	Leu	Asn	Ala	Ser	Tyr	Lys	Ile	Thr	Asp	Trp	Leu	Thr	Ser
				405					410						415
Ser	Ser	Asn	Phe	Asn	Tyr	Asn	Arg	Ala	Asn	Trp	Lys	Asn	Met	Pro	Gly
		420					425						430		
Ser	Gln	Thr	Ser	Glu	Gly	Asn	Tyr	Phe	Gly	Arg	Ile	Met	Ser	Thr	Pro
		435					440					445			
Pro	Thr	Val	Arg	Phe	Gln	Asp	Glu	Asp	Gly	Asn	Pro	Thr	Leu	Gly	Pro
	450					455					460				
Val	Ala	Gly	Asp	Gly	Asn	Gln	Asn	Tyr	Gln	Pro	Asp	Lys	Trp	Trp	Asn
465					470					475					480
Phe	Asn	Gln	Ser	Asp	Lys	Phe	Thr	Met	Val	Gln	Ala	Phe	Gln	Ile	Asp
				485					490						495
Ile	Leu	Lys	Asn	Leu	Ser	Val	Lys	Gly	Thr	Ala	Asn	Trp	Tyr	Tyr	Ser
			500					505					510		
Glu	Ser	Leu	Ala	Glu	Ser	Phe	Thr	Arg	Asp	Tyr	Glu	Asn	Thr	Pro	Gly
	515						520					525			
Gln	Phe	Val	Arg	Thr	Arg	Ser	Ser	Ser	Ala	Ser	Phe	Ser	Arg	Asp	Phe
	530					535					540				
Ser	Gln	Thr	Tyr	Asn	Val	Val	Leu	Asn	Tyr	Asn	Gln	Thr	Phe	Ala	Lys
545					550					555					560
Asp	His	Asn	Val	Ala	Val	Met	Leu	Gly	Met	Glu	Tyr	Phe	Asp	Arg	Tyr
				565					570						575
Ser	Arg	Ser	Phe	Ser	Ala	Ser	Gly	Ser	Gly	Ala	Pro	Thr	Asp	Asp	Phe
			580					585					590		
Ala	Asp	Leu	Ser	Leu	Thr	Asp	Asn	Gly	Glu	Gly	Lys	Arg	Ser	Ile	Asp

595                      600                      605  
 Ser Gly His Ser Asp Tyr Arg Ile Leu Ser Tyr Phe Gly Arg Leu Asn  
   610                      615                      620  
 Tyr Asp Tyr Lys Gly Arg Tyr Leu Leu Ser Ala Val Phe Arg Gln Asp  
 625                      630                      635                      640  
 Gly Tyr Ser Ser Leu Leu Gly Asp Asn Arg Trp Gly Phe Phe Pro Gly  
                     645                      650                      655  
 Val Ser Ala Gly Trp Ile Phe Gly Gln Glu Asn Xaa Val Lys Asn Ala  
                     660                      665                      670  
 Leu Pro Phe Leu Ser Phe Gly Lys Leu Arg Ala Ser Tyr Gly Val Asn  
                     675                      680                      685  
 Gly Asn Ser Thr Gly Ile Gly Ala Ser Ser  
                     690                      695

<210> 6721  
 <211> 73  
 <212> PRT  
 <213> B.fragilis

<400> 6721  
 Ser Leu Arg Ser Ile Gly Leu Lys Pro Arg Pro Leu Ser Phe Glu Thr  
 1                      5                      10                      15  
 Asn Gly Thr Leu Val Leu Lys Val Phe Ser Arg Trp Tyr Asn Thr Ile  
                     20                      25                      30  
 Tyr Gln His Ile Val Ser Glu Thr Phe Ala Lys Ala Gly Ser Ser Val  
                     35                      40                      45  
 Arg Ile Leu Ile Thr Asp Lys Lys Asn Tyr Lys Pro Thr Ser Glu Arg  
                     50                      55                      60  
 Cys Val Glu Thr Leu Phe Thr Thr Glu  
 65                      70

<210> 6722  
 <211> 329  
 <212> PRT  
 <213> B.fragilis

<400> 6722  
 Arg Lys Asn Lys Lys Met Gly Leu Phe Ile Lys Lys Pro Phe Glu Ala  
 1                      5                      10                      15  
 Leu Leu Ala Glu Ala Asn Ala Ser Gly Ser Lys Ser Leu Lys Arg Val  
                     20                      25                      30  
 Leu Gly Pro Trp Ser Leu Val Ala Leu Gly Val Gly Val Ile Ile Gly  
                     35                      40                      45  
 Ala Gly Leu Phe Ser Ile Thr Gly Thr Val Ala Ala Gly Tyr Thr Gly  
                     50                      55                      60  
 Pro Ala Ile Thr Leu Ser Phe Ala Ile Ala Ala Leu Gly Cys Cys Phe  
 65                      70                      75                      80  
 Ala Gly Leu Cys Tyr Ala Glu Phe Ala Ser Met Ile Pro Val Ala Gly  
                     85                      90                      95  
 Ser Ala Tyr Thr Tyr Ser Tyr Ala Thr Met Gly Glu Leu Ile Ala Trp  
                     100                      105                      110  
 Ile Ile Gly Trp Asp Leu Val Leu Glu Tyr Thr Val Ala Ala Thr Thr  
                     115                      120                      125  
 Val Ser Ile Ser Trp Ser Arg Tyr Leu Val Val Phe Leu Glu Gly Leu  
                     130                      135                      140  
 Asp Ile His Leu Pro Gln Ala Leu Thr Ala Cys Pro Trp Asp Gly Gly  
 145                      150                      155                      160  
 Ile Val Asn Ile Pro Ala Phe Leu Ile Val Val Leu Met Ser Ile Phe  
                     165                      170                      175

Leu Ile Arg Gly Thr Glu Gly Ser Ser Ile Phe Asn Gly Ile Ile Val  
 180 185 190  
 Phe Leu Lys Val Ser Val Ile Ala Ile Phe Val Val Leu Arg Trp Lys  
 195 200 205  
 Tyr Ile Asn Ala Asp Asn Tyr Thr Pro Tyr Ile Pro Ala Asn Thr Gly  
 210 215 220  
 Thr Leu Gly Glu Tyr Gly Leu Ser Gly Val Leu Arg Gly Ala Ala Ile  
 225 230 235 240  
 Val Phe Phe Ala Phe Leu Gly Phe Asp Ala Val Ser Thr Ala Ala Gln  
 245 250 255  
 Glu Thr Lys Asn Ser Glu Thr Glu Tyr Ala Asp Arg Tyr Ser Gly Ile  
 260 265 270  
 Thr Leu Gly Met Tyr Arg Thr Leu Tyr Ala Cys Cys Pro Arg Asn Asp  
 275 280 285  
 Arg Ser Ser Pro Leu Ile Pro Asn Phe Asn Gly Gln Lys Gly Ile Ala  
 290 295 300  
 Pro Val Ala Ile Ala Ile Arg Thr His Gly Thr Cys Arg Cys Asn Arg  
 305 310 315 320  
 Ala Ser Phe Thr Arg Ile Ile Pro Trp  
 325

<210> 6723  
 <211> 116  
 <212> PRT  
 <213> B.fragilis

<400> 6723  
 Lys Trp Ile Glu Glu Ala Arg Ala Leu Gly Asp Thr Pro Glu Glu Lys  
 1 5 10 15  
 Glu Leu Tyr Glu Trp Asn Ala Arg Val Gln Ile Thr Thr Trp Gly Asn  
 20 25 30  
 Arg Asn Ala Ala Asp Tyr Gly Gly Leu Arg Asp Tyr Ala His Lys Glu  
 35 40 45  
 Trp Asn Gly Leu Leu Lys Asp Phe Tyr Tyr Met Arg Trp Lys Leu Tyr  
 50 55 60  
 Phe Asp Phe Leu Ser Gln Arg Ile Glu Gly Lys Thr Pro Ala Glu Ile  
 65 70 75 80  
 Asp Phe Tyr Ala Ile Glu Glu Pro Trp Thr Lys Ala Ala Asn Pro Tyr  
 85 90 95  
 Ser Ala Glu Ala Glu Gly Asp Cys Ile Glu Val Ala Lys Gln Val Met  
 100 105 110  
 Gln Ala Val Glu  
 115

<210> 6724  
 <211> 202  
 <212> PRT  
 <213> B.fragilis

<400> 6724  
 Ala Met Thr Asp Tyr Phe Pro Pro Phe Phe Ser His Ile Asn Glu Lys  
 1 5 10 15  
 Phe Arg Thr Pro Ala Arg Ser Asn Leu Phe Met Leu Ile Val Gly  
 20 25 30  
 Leu Leu Ala Ala Phe Val Pro Ala Arg Leu Ala Gly Glu Met Thr Ser  
 35 40 45  
 Ile Gly Thr Leu Met Ala Phe Thr Leu Val Cys Ala Ala Val Leu Val  
 50 55 60  
 Val Arg Lys Thr Met Pro Asn Val Pro Arg Ser Phe Lys Thr Pro Phe

65				70				75			80				
Val	Pro	Leu	Val	Pro	Ile	Leu	Gly	Ile	Leu	Thr	Cys	Leu	Cys	Met	Met
				85				90						95	
Leu	Phe	Leu	Pro	Ala	Asp	Thr	Trp	Ile	Arg	Leu	Val	Leu	Trp	Met	Leu
			100					105					110		
Ile	Gly	Leu	Asp	Ile	Tyr	Val	Gly	Tyr	Gly	Met	Lys	His	Ser	Lys	Leu
		115					120					125			
Glu	His	Gly	Val	Lys	Asn	Arg	Arg	Gly	Gln	Ser	Ala	Leu	Asn	Met	Ile
	130					135					140				
Gly	Ile	Ala	Leu	Ser	Leu	Leu	Cys	Val	Ile	Thr	Gly	Leu	Trp	His	Gln
145					150					155					160
Gln	Thr	Val	Gly	Trp	Asn	Glu	Ser	Lys	Ile	Leu	Leu	Ile	Ile	Ser	Phe
				165					170						175
Val	Phe	Ala	Phe	Thr	His	Cys	Ala	Tyr	Tyr	Met	Met	Arg	Ile	Trp	Lys
			180					185					190		
Gly	Thr	Thr	Lys	Gln	Thr	Asn	Asp	Asn	Gly						
		195					200								

&lt;210&gt; 6725

&lt;211&gt; 432

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6725

Thr	Leu	Cys	Cys	Ala	Pro	Phe	Ala	Met	Gln	Ala	Gln	Gln	Pro	Gln	Ile
1				5					10					15	
Tyr	Thr	Leu	Lys	Ser	Cys	Leu	Glu	Tyr	Gly	Leu	Gln	Asn	Asn	Tyr	Ser
			20					25					30		
Leu	Gln	Ile	Val	Arg	Asn	Glu	Glu	Gln	Val	Ser	Arg	Asn	Asn	Ala	Thr
		35				40						45			
Pro	Gly	Asn	Ala	Gly	Tyr	Leu	Pro	Thr	Leu	Asp	Phe	Thr	Ala	Gly	Tyr
	50					55					60				
Lys	Gly	Thr	Val	Asp	Asn	Thr	Asn	Thr	Lys	Val	Arg	Ala	Thr	Gly	Glu
65					70					75					80
Ser	Val	Lys	Glu	Asn	Gly	Val	Phe	Asp	Gln	Thr	Leu	Asn	Val	Gly	Leu
				85					90					95	
Asn	Leu	Asn	Trp	Thr	Ile	Phe	Asp	Gly	Phe	Asn	Ile	Thr	Ala	Asn	Tyr
		100						105					110		
Gln	Lys	Leu	Lys	Glu	Leu	Gln	Leu	Gln	Gly	Glu	Thr	Asn	Thr	Arg	Ile
		115					120					125			
Ala	Ile	Glu	Asp	Leu	Ile	Ala	Asn	Leu	Ala	Ala	Glu	Tyr	Tyr	Asn	Tyr
	130					135					140				
Val	Gln	Gln	Lys	Ile	Arg	Leu	Gln	Asn	Phe	Arg	Tyr	Ala	Val	Ser	Leu
145					150					155					160
Ser	Lys	Glu	Arg	Leu	Arg	Ile	Val	Glu	Glu	Arg	Tyr	His	Ile	Gly	Asn
				165					170						175
Phe	Ser	Arg	Leu	Asp	Tyr	Gln	Gln	Ala	Lys	Val	Asp	Phe	Asn	Ala	Asp
			180					185					190		
Ser	Ala	Lys	Tyr	Met	Lys	Gln	Gln	Glu	Leu	Leu	His	Thr	Ser	Arg	Ile
		195					200					205			
Gln	Leu	Asn	Glu	Leu	Met	Ala	Asn	Glu	Asp	Val	Asp	Gln	Pro	Leu	Val
	210					215					220				
Ile	Glu	Asp	Ser	Ile	Ile	Lys	Val	Asn	Ala	Gly	Leu	Arg	Phe	Glu	Glu
225					230					235					240
Leu	Trp	Asn	Ala	Thr	Leu	Leu	Thr	Asn	Ala	Ser	Leu	Leu	Lys	Ala	Glu
				245					250						255
Gln	Asn	Asn	Thr	Leu	Ala	Met	Leu	Asp	Tyr	Lys	Lys	Val	Asn	Ser	Arg
			260					265					270		
Asn	Tyr	Pro	Tyr	Leu	Lys	Met	Asn	Thr	Gly	Tyr	Gly	Tyr	Thr	Phe	Asn

275	280	285
Lys Tyr Asp Ile Ala Ala	Asn Ser Gln Arg Gly	Asn Leu Gly Ala Asn
290	295	300
Phe Gly Val Thr Val Gly	Phe Asn Ile Phe Asp	Gly Asn Arg Arg Arg
305	310	315
Glu Lys Asn Asn Ala Arg	Ile Ala Ile Lys Asn	Ala Arg Leu Gln Arg
325	330	335
Glu Gln Leu Glu Gln Gly	Leu Lys Ala Asp	Leu Ser Asn Leu Trp Gln
340	345	350
Ala Tyr Gln Asn Asn Leu	Gln Met Leu Lys Leu	Glu Arg Gln Asn Leu
355	360	365
Val Ala Ala Lys Glu Asn	His Glu Ile Ala Met	Glu Arg Tyr Met Leu
370	375	380
Gly Asn Leu Ser Gly Ile	Glu Met Arg Glu Ala	Gln Lys Ser Leu Leu
385	390	395
Asp Ala Glu Glu Arg Ile	Leu Ser Ala Glu Tyr	Asp Thr Lys Leu Cys
405	410	415
Glu Ile Ser Leu Leu Gln	Ile Ser Gly Lys Ile	Thr Lys Tyr Leu Glu
420	425	430

&lt;210&gt; 6726

&lt;211&gt; 446

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6726

Arg Pro Val Trp	Arg Asn Val Leu	Asp Lys Leu Gly	Tyr Thr Lys Thr
1	5	10	15
Glu Ile Asn Glu	Phe Ile Ser Gly	Pro Gly Phe Phe	Ala Trp Trp Val
20	25	30	
Met Asn Asn Leu	Gly Gly Trp Gly	Gly Pro Asn Pro	Asp Ser Trp Tyr
35	40	45	
Thr Arg Gln Ile	Ala Leu Gln Lys	Lys Ile Leu Lys	Arg Met Arg Glu
50	55	60	
Tyr Gly Ile Glu	Pro Val Leu Pro	Gly Tyr Cys Gly	Met Val Pro His
65	70	75	80
Asn Ala Lys Glu	Lys Leu Gly Leu	Asn Val Ser Asp	Pro Gly Thr Trp
85	90	95	
Cys Gly Tyr Arg	Pro Ala Phe Leu	Gln Pro Ser Asp	Pro Arg Phe
100	105	110	
Glu Glu Ile Ser	Ser Leu Tyr Tyr	Lys Glu Leu Glu	Lys Leu Tyr Gly
115	120	125	
Lys Ala Asn Phe	Tyr Ser Met Asp	Pro Phe His Glu	Gly Gly Asn Thr
130	135	140	
Ala Gly Val Asp	Leu Asp Ala Ala	Gly Lys Ala Val	Met Lys Ala Met
145	150	155	160
Lys Lys Ala Asn	Pro Lys Ala Val	Trp Val Ala Gln	Ala Trp Gln Ala
165	170	175	
Asn Pro Arg Pro	Lys Met Ile Glu	Asn Leu Lys Ala	Gly Asp Leu Leu
180	185	190	
Ile Leu Asp Leu	Thr Ser Glu Cys	Arg Pro Gln Trp	Gly Asp Ser Thr
195	200	205	
Ser Glu Trp Tyr	Arg Lys Asn Gly	Tyr Gly Gln His	Asp Trp Ile Tyr
210	215	220	
Cys Met Leu Leu	Asn Tyr Gly Gly	Asn Val Gly Leu	His Gly Lys Met
225	230	235	240
Asp Asn Val Ile	Asp Asn Phe Tyr	Leu Ala Lys Ala	Asp Pro His Ala
245	250	255	
Ser Ala Thr Leu	Lys Gly Val Gly	Met Thr Pro Glu	Gly Ile Glu Asn

260	265	270
Asn Pro Val Met Tyr Glu Leu	Val Met Glu Leu Pro	Trp Arg Pro Asp
275	280	285
Arg Phe Thr Lys Glu Glu Trp	Leu Lys Glu Tyr Val	Lys Ala Arg Tyr
290	295	300
Gly Val Asp Asp Pro Val Val	Gln Ala Ala Trp Thr	Asn Leu Ala Asn
305	310	315
Ser Ile Tyr Asn Ser Pro Lys	Asn Leu Thr Gln Gln Gly	Thr His Glu
325	330	335
Ser Val Phe Cys Ala Arg Pro	Ala Glu Asp Val Tyr Gln	Val Ser Ser
340	345	350
Trp Ser Glu Met Lys Asp Tyr	Tyr Arg Pro Gln Glu Val	Ile Glu Ala
355	360	365
Ala Arg Leu Met Val Ser Val	Ala Asp Arg Phe Lys Gly	Asn Asn Asn
370	375	380
Phe Glu Tyr Asp Leu Val Asp	Ile Val Arg Gln Ala Leu	Ala Glu Lys
385	390	395
Gly Arg Leu Met Gln Lys Ala	Val Thr Ala Ala Tyr Arg	Ala Gly Asp
405	410	415
Lys Gln Leu Phe Ala Leu Ala	Ser Gly Lys Phe Leu Asp	Leu Ile Leu
420	425	430
Leu Gln Asp Lys Leu Leu Gly	Thr Arg Pro Glu Phe Arg	Val
435	440	445

&lt;210&gt; 6727

&lt;211&gt; 301

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6727

Lys Cys Ile Ser Met Lys Pro Tyr His Ile Asn Lys Lys Gln Ile Leu	1	5	10	15
Ile Met Gly Cys Leu Gly Met Phe Pro Leu Phe Ser Ser Ala Gln Asp	20	25	30	
Ile Leu Ser Thr Ser Gly Thr Ser Arg Trp Asp Tyr Ser Asn Ser Arg	35	40	45	
Val Glu Arg Glu Pro Gly Arg Asp Ala Leu Asp Ile Thr Phe Ser Val	50	55	60	
Phe Pro Leu Ala Gly Leu Gly Ser Gln Glu Val Ala Tyr Leu Phe Pro	65	70	75	80
Val Tyr Val Ser Ala Asp Gly Arg Asp Ser Val Arg Leu Glu Pro Val	85	90	95	
Cys Val Ala Gly Lys Arg Arg Tyr Lys Val Ile Lys Arg Arg Lys Ala	100	105	110	
Leu Gly Asn Leu Lys Pro Gly Asn Pro Gly Ser Gly Glu Val Arg Ser	115	120	125	
Ala Lys Val Leu Glu Ser Ser Gly Leu Thr Val Lys Arg Ser Val Pro	130	135	140	
Phe Glu Arg Trp Met Ala Asp Gly Arg Leu Val Val Arg Glu Val Ser	145	150	155	160
Tyr Gly Cys Ala Glu Cys Gly Thr Asn Glu Ser Glu Asp Ile Ala Phe	165	170	175	
Gln Ala Gly Ile Pro Leu Phe Gly Glu Lys Asp Tyr Ala Tyr Ser Phe	180	185	190	
Ile Glu Pro Glu Lys Val Met Ile Lys Cys Tyr Lys Asp Ser Phe Asp	195	200	205	
Cys Lys Val Val Phe Pro Val Ala Arg His Asp Leu Gln Glu Asp Phe	210	215	220	
Ala Gly Asn Ala Gln Glu Leu Asp Ser Leu Lys Lys Phe Leu Ser Glu				





Ile	Asn	Pro	Glu	Asp	Ile	Arg	Ser	Met	Gln	Val	Leu	Lys	Asp	Ala	Ser
210						215					220				
Ser	Thr	Ala	Ile	Tyr	Gly	Ser	Arg	Gly	Ser	Asn	Gly	Val	Val	Leu	Ile
225					230					235					240
Thr	Thr	Lys	Ile	Gly	Lys	Ala	Gly	Val	Arg	Glu	Ile	Met	Phe	Asp	Ala
				245					250					255	
Ser	Val	Gly	Val	Ser	Asn	Val	Tyr	Lys	Arg	Tyr	Asp	Ile	Leu	Gly	Ala
			260					265					270		
Tyr	Asp	Tyr	Ala	Leu	Ala	Leu	Lys	Glu	Val	Lys	Gly	Ile	Asp	Phe	Ser
			275				280					285			
Asn	Glu	Glu	Met	Gln	Ser	Tyr	Gln	Asn	Gly	Thr	Gly	Gly	Ile	Asp	Trp
	290					295					300				
Gln	Asp	Glu	Ile	Phe	Arg	Thr	Gly	Ile	Thr	Gln	Asn	Tyr	Lys	Leu	Ala
305					310					315					320
Leu	Ser	Asn	Gly	Ser	Glu	Lys	Thr	Gln	Tyr	Tyr	Ile	Ser	Ala	Asn	Tyr
				325					330					335	
Met	Ser	Gln	Glu	Gly	Val	Val	Ile	Glu	Ser	Lys	Asn	Glu	Arg	Tyr	Gln
			340					345					350		
Ala	Lys	Ala	Asn	Leu	Ser	Ser	Gln	Leu	Thr	Asp	Trp	Leu	His	Ile	Thr
		355					360					365			
Ala	Asp	Ile	Asn	Ala	Ser	His	Gly	Val	Arg	Arg	Gly	Gly	Ser	Phe	Ala
	370					375					380				
Ser	Gly	Lys	Asp	Asn	Pro	Ile	Trp	Ile	Ala	Leu	Asn	Tyr	Ser	Pro	Thr
385					390					395					400
Met	Thr	Met	Met	Ala	Glu	Asn	Gly	Asn	Tyr	Asn	Thr	Asp	Thr	Tyr	Asn
				405				410						415	
Ser	Ile	Ala	Ser	Asn	Pro	Val	Gly	Ile	Leu	Lys	Leu	Gln	Ser	Gly	Glu
			420					425					430		
Thr	Met	Thr	Asn	Val	Phe	Asn	Gly	Arg	Val	Asp	Leu	Arg	Leu	Asp	Ile
			435				440					445			
Met	Lys	Gly	Leu	Thr	Phe	Thr	Thr	Thr	Asn	Gly	Val	Asp	Tyr	Tyr	Asp
	450					455					460				
Gly	Lys	Ser	Tyr	Ser	Phe	Ser	Ser	Lys	Arg	Val	Gly	Thr	Lys	Ser	Gly
465					470					475					480
Met	Gly	Asn	Asn	Asp	Thr	Tyr	Arg	Leu	Met	Leu	Gln	Ser	Ser	Asn	Asn
				485				490						495	
Leu	Thr	Tyr	Thr	Gly	Ser	Trp	Asn	Asp	His	His	Leu	Thr	Ala	Thr	Ala
			500					505					510		
Val	Tyr	Glu	Val	Thr	Ser	Ser	Glu	Thr	Arg	Thr	Met	Gly	Ile	Thr	Gly
			515				520					525			
Asn	Asn	Leu	Leu	Thr	Glu	Gly	Val	Gly	Trp	Trp	Asn	Val	Gly	Met	Ala
			530			535					540				
Ser	Ser	Arg	Asp	Ala	Asn	Asn	Gly	Tyr	Glu	Gln	Trp	Ala	Leu	Met	Ser
545					550					555					560
Gly	Val	Ala	Arg	Val	Met	Tyr	Asn	Phe	Lys	Asp	Arg	Tyr	Met	Leu	Thr
				565					570					575	
Gly	Thr	Phe	Arg	Ala	Asp	Gly	Ser	Ser	Arg	Phe	Ala	Lys	Lys	Lys	Trp
			580					585					590		
Gly	Tyr	Phe	Pro	Ser	Ile	Ala	Ala	Ala	Trp	Thr	Leu	Ser	Asn	Glu	Asp
			595			600						605			
Phe	Met	Lys	Asp	Val	Ser	Ser	Val	Gln	Asp	Ile	Lys	Leu	Arg	Ala	Ser
	610					615					620				
Tyr	Gly	Ile	Val	Gly	Ser	Gln	Ala	Ile	Ser	Pro	Tyr	Ala	Thr	Met	Gly
625					630					635					640
Leu	Met	Ser	Ala	Thr	Ala	Tyr	Asn	Phe	Gly	Thr	Asn	Ser	Asn	Phe	Thr
				645					650					655	
Gly	Tyr	Trp	Ala	Asn	Asp	Ile	Ala	Thr	Pro	Glu	Leu	Thr	Trp	Glu	Lys
			660				665						670		
Thr	Lys	Gln	Phe	Asp	Leu	Gly	Leu	Glu	Phe	Ser	Leu	Phe	Asp	Arg	Arg

675	680	685
Leu Asn Phe Ser Val Asp Tyr Phe Tyr Lys Arg Thr Thr Asp Ala Leu		
690	695	700
Leu Lys Arg Ser Ile Pro Gly Tyr Val Gly Gly Asn Ser Phe Trp Val		
705	710	715
Asn Asp Gly Glu Ile Ser Asn Arg Gly Ile Asp Leu Ser Val Thr Ala		
	725	730
Arg Ile Met Gln Asn Asp Arg Phe Gln Trp Thr Ser Thr Leu Asn Gly		
	740	745
Thr Tyr Leu Lys Asn Arg Val Glu Arg Leu Ser Gly Gly Glu Asn Asp		
	755	760
Phe Ile Asn Gly Ser Ser Pro Ala Ala Gly Met Val Asp Tyr Ala Thr		
	770	775
Ile Ile Lys Pro Gly Glu Ala Ile Gly Thr Phe Trp Gly Tyr Glu Trp		
785	790	795
Thr Gly Leu Asp Glu Asn Gly His Asp Thr Tyr Thr Asp Val Asp Gly		
	805	810
Asn Gln Met Ile Asp Gly Gly Asp Arg Lys Val Ile Gly Lys Ala Asn		
	820	825
Pro Asp Phe Thr Leu Gly Trp Asn Asn Ser Leu Ser Tyr Lys Asn Trp		
	835	840
Asp Leu Asn Leu Phe Phe Asn Gly Ser Phe Gly Ala Lys Arg Leu Asn		
	850	855
Leu Val Arg Tyr Thr Met Ala Ser Ala Glu Gly Asn Ser Arg Phe Val		
865	870	875
Thr Leu Ala Asp Ala Tyr Leu Lys Gly Phe Asp Lys Ile Gly Ser Ser		
	885	890
Ala Thr Tyr Pro Ser Leu Thr Glu Gly Gly Asn Asn Leu Gln Pro Val		
	900	905
Ser Thr Lys Trp Leu Glu Asn Ala Asp Phe Leu Arg Leu Glu Asn Ile		
	915	920
Ser Leu Ser Tyr Thr Phe Pro Lys Lys Thr Thr Gly Phe Ala Asp Leu		
	930	935
Arg Leu Thr Phe Ser Cys Gln Asn Leu Phe Thr Ile Thr Gly Tyr Lys		
945	950	955
Gly Met Asp Pro Ala Gly Thr Thr Phe Ser Asn Ser Ser Val Asp Val		
	965	970
Asp Ala Gly Ile Asp Met Gly Ala Tyr Pro Ser Pro Arg Thr Phe Thr		
	980	985
		990
Phe Gly Leu Arg Met Asn Phe		
995		

&lt;210&gt; 6730

&lt;211&gt; 68

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6730

Arg Pro Gly Thr Phe Thr Gly His Asp His Phe Pro Glu Phe Leu Tyr		
1	5	10
Val Arg Gly Glu Thr Tyr Gly Met Tyr Ala Ala Phe Phe Glu Tyr Leu		
	20	25
Val Gln Arg His Thr Pro Gly Thr Val Thr Gln Ala Leu His Glu Asp		
	35	40
Arg Ile His Glu Thr Arg Ser Met Thr Glu Asn Asn His Ser Thr Gly		
	50	55
		60
Gly Ala Asp Lys		
65		

<210> 6731  
 <211> 287  
 <212> PRT  
 <213> B.fragilis

<400> 6731

Ala	Thr	Lys	Thr	Glu	Thr	Met	Glu	Leu	Phe	Tyr	Leu	Asn	Glu	His	Thr
1			5						10					15	
Ser	Cys	Tyr	Asn	Tyr	Ser	Lys	Ser	Met	Gln	Glu	Gly	Phe	Arg	Tyr	Tyr
			20					25					30		
Lys	Phe	Asp	Glu	Gly	Leu	Asn	His	Glu	Glu	Glu	Leu	Val	Lys	Asp	Cys
		35					40					45			
Ile	Leu	Phe	Val	Leu	Lys	Gly	Ser	Leu	Gln	Phe	Ser	Cys	Asn	Gly	Phe
	50					55					60				
Gln	Phe	Thr	Val	Ser	Ser	Gly	Glu	Met	Val	Phe	Phe	Cys	Arg	Asp	Ser
65					70					75				80	
Leu	Phe	Asn	Thr	Gln	Ser	Leu	Glu	Lys	Cys	Glu	Val	Val	Ala	Ala	Leu
			85						90					95	
Phe	Glu	Gly	Gly	Val	Trp	Pro	Cys	Gln	Arg	Ala	Ser	Phe	Ser	Glu	Leu
			100					105					110		
Tyr	His	Leu	Arg	Glu	Ile	Val	Glu	Tyr	Arg	Met	Glu	Pro	Leu	Glu	Ile
		115					120						125		
Arg	Asp	Arg	Leu	Cys	Lys	Phe	Leu	Glu	Leu	Leu	Val	Cys	Tyr	Leu	Glu
	130					135					140				
Asp	Gly	Ala	Asn	Cys	Ile	His	Phe	His	Glu	Ile	Lys	Leu	Lys	Glu	Leu
145					150					155				160	
Phe	Trp	Asn	Ile	Arg	Phe	Tyr	Tyr	Ser	Arg	Gln	Glu	Leu	Ala	Asn	Phe
			165						170					175	
Phe	Tyr	Met	Ile	Ile	Gly	Arg	Ser	Gln	Asp	Phe	Lys	Asn	Lys	Val	Leu
		180						185					190		
Asn	Asn	Tyr	Lys	Ser	Cys	Arg	Thr	Val	Lys	Glu	Leu	Ala	Ser	Ala	Cys
		195					200						205		
Asp	Ile	Ser	Leu	Ser	Ala	Phe	Lys	Arg	Gln	Phe	Ser	Ala	Glu	Phe	Gly
	210					215					220				
Glu	Ala	Pro	Ala	Glu	Trp	Met	Gln	Lys	Gln	Leu	Leu	Gly	Glu	Ile	Lys
225					230					235				240	
Tyr	Lys	Leu	Ser	Val	Thr	Asp	Leu	Pro	Leu	Gly	Thr	Ile	Ala	Asn	Glu
			245						250					255	
Leu	Glu	Phe	Ser	Ser	Leu	Ala	His	Phe	Ser	Arg	Phe	Cys	Lys	Arg	Cys
		260					265						270		
Leu	Gly	Cys	Ser	Pro	Arg	Glu	Leu	Arg	Gln	Gln	Ile	Lys	Gly	Gly	
		275					280						285		

<210> 6732  
 <211> 207  
 <212> PRT  
 <213> B.fragilis

<400> 6732

Ser	Asn	Glu	Thr	Met	Asn	Asn	Ser	Met	Met	Lys	Pro	Phe	Phe	Leu	Leu
1			5						10					15	
Val	Phe	Leu	Leu	Cys	Ser	Ala	Gly	Ala	Phe	Ser	Gln	Lys	Val	Ala	Leu
		20						25					30		
Lys	Asn	Asn	Leu	Ala	Tyr	Asp	Ala	Leu	Lys	Thr	Pro	Asn	Leu	Ser	Leu
		35					40					45			
Glu	Phe	Ser	Met	Gly	Arg	Lys	Trp	Thr	Leu	Asp	Thr	Gln	Val	Gly	Met
	50					55				60					
Asn	Phe	Phe	Phe	Tyr	Thr	Arg	Asp	Ala	Thr	Ser	Ser	Arg	Tyr	Lys	Ala
65					70					75				80	

[illegible]

<400> 6733

```
<210> 6734
<211> 467
<212> PRT
<213> B.fragilis
```

<400> 6734

Lys	Lys	Ser	Tyr	Thr	Tyr	Lys	Thr	Tyr	Arg	Ser	Leu	Thr	Asp	Gly	Ser
1				5					10					15	
Gly	Thr	Asp	Phe	Pro	Ser	Phe	Val	Gln	Phe	Ser	Arg	Leu	Val	Thr	Glu
			20					25					30		
Leu	Phe	Trp	Ser	Phe	Ser	Asp	Leu	Met	His	Ile	Ser	Leu	Cys	Phe	Leu
			35				40					45			
Ser	Arg	Lys	Gln	Gly	Ser	Val	Lys	Cys	Leu	Thr	Asn	Lys	Lys	Leu	Met
	50					55					60				
Ala	Thr	Val	Lys	Thr	Val	Leu	Val	Lys	Gly	Arg	Ser	Asn	Arg	Ser	Gly
65					70					75					80
Lys	Phe	Pro	Leu	Val	Gln	Val	Leu	His	Lys	Arg	Arg	Lys	Lys	Val	
				85				90					95		
Val	Tyr	Thr	Gly	Phe	Ser	Ile	Pro	Asp	Thr	Leu	Phe	Asp	Pro	Val	Lys
			100					105					110		
Gly	Arg	Val	Ile	Asp	Gly	Gly	Glu	Asn	Thr	Pro	Glu	Ser	Ile	Arg	Arg
		115					120					125			
Ile	Asn	Asn	Arg	Cys	Glu	Ser	Ile	Ser	Arg	Val	Leu	Leu	Lys	Cys	Ile

130  
 Ser Met Ile Glu Lys Lys Ser Arg Glu Tyr Glu Ile Glu Asp Val Phe  
 145 150 155 160  
 Arg Thr Tyr Gly Val Leu Thr Arg Glu Ala Gly Phe Tyr Phe Tyr Phe  
 165 170 175  
 Ser Arg Lys Ile Arg Glu Leu Arg Glu Ser Gly His Glu Gly Thr Ala  
 180 185 190  
 Arg Ala Tyr Ala Ser Ser Leu Arg Ser Met Gln Arg Tyr Leu Gly Lys  
 195 200 205  
 Lys Asp Phe Pro Phe Ile Lys Leu Ser Ser Arg Ile Ile Ser Asp Tyr  
 210 215 220  
 Gln Gly Lys Leu Leu Ala Ser Gly Ile Cys Asp Asn Thr Ile Gly Phe  
 225 230 235 240  
 Tyr Leu His Asn Ile Lys Ala Leu Phe Arg Lys Gly Cys Arg Glu Met  
 245 250 255  
 Gly Leu Glu Leu Pro Cys Pro Phe Arg Asp Ile Ser Ile Lys Thr Glu  
 260 265 270  
 Lys Thr Leu Lys Arg Ser Leu Asp Pro Val Val Ile Lys Thr Leu Ser  
 275 280 285  
 Ala Ile Glu Leu Glu Lys Asp Ser Pro Leu Ser Leu Ala Arg Asp Ile  
 290 295 300  
 Phe Met Phe Ser Phe Tyr Thr Arg Gly Met Ser Phe Val Asp Ile Ala  
 305 310 315 320  
 Leu Leu Lys Lys Arg His Val Phe Pro Gly Glu Ile Cys Tyr Arg Arg  
 325 330 335  
 His Lys Thr Asp Gln Leu Met Arg Val Gly Ile Asn Lys Glu Ile Ser  
 340 345 350  
 Arg Ile Leu Glu Arg Tyr Lys Asn Val Pro Gly Glu Tyr Ile Phe Pro  
 355 360 365  
 Leu Phe Pro Ala Glu Arg Asp Pro Tyr Ala Gly Tyr Arg Ser Ala Tyr  
 370 375 380  
 His Arg Ile Arg Tyr Ser Leu Gly Lys Ile Ser Arg Val Ile Gly Leu  
 385 390 395 400  
 Glu Phe Pro Leu Arg Leu His Ala Ala Arg His Ser Trp Ala Thr Ile  
 405 410 415  
 Ala Lys Val Asn Gly Ala Ser Val His Val Ile Gly Glu Cys Leu Gly  
 420 425 430  
 His Thr Ser Glu Lys Thr Thr Arg Ile Tyr Leu Lys Glu Leu Asp His  
 435 440 445  
 Ser Ala Leu Asp Ala Val Asn Asn Gln Val Ala Asp Phe Ile Leu Ala  
 450 455 460  
 Val Asp Asp  
 465

&lt;210&gt; 6735

&lt;211&gt; 486

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6735

Asn Arg Leu Gln Ile Ile Ser Thr Phe Gly Gln Ala Arg Val Cys Cys  
 1 5 10 15  
 Arg Arg Ala Asn Leu Val Glu Ser Leu Gln Ile Gly Val Cys Gln Ser  
 20 25 30  
 Tyr Lys Ala Gly Ile Pro Phe Gly Arg Ser His Arg Ile Ser Tyr Lys  
 35 40 45  
 Ile Gln Thr Phe Gly Ser Glu Arg Ser Val Glu Glu Gln Val Gln Ile  
 50 55 60  
 Pro Val Phe Ile Arg Gln Gly Val Ile Pro Ser Gln Gly Glu Ile Gly

65		70		75		80
Ile Gly Leu Ala Asp Asp Leu Ala Val Ala Thr Val Tyr His Leu Ile						
		85		90		95
Ser Ile Tyr Ile Arg Val Ser Val Met Ser Val Phe Ile Gln Ala Gly						
		100		105		110
Pro Phe Ile Ser Pro Lys Ser Thr Asp Gly Leu Thr Arg Leu Asp Asn						
		115		120		125
Gly Gly Ile Ile Asn His Thr Gly Ser Arg Thr Gly Ala Val Asp Glu						
		130		135		140
Ile Ile Leu Thr Thr Gly Lys Ala Phe His Ala Val Leu Gln Ile Ser						
145		150		155		160
Thr Val Gln Gly Gly Gly Pro Leu Glu Pro Val Ile Leu His Asn Pro						
		165		170		175
Gly Gly His Ala Gln Ile Asn Thr Thr Ile Thr Asp Phe Ala Val Ile						
		180		185		190
His Pro Lys Arg Val Thr Ala Asp Ile Ser Gly Asp Thr Ser Phe Lys						
		195		200		205
Gln Arg Ile Cys Ser Thr Leu Ile Glu Ile Val His Thr Glu Ile Gln						
		210		215		220
Pro Pro Val Glu Gln Gly Glu Leu Gln Thr Gln Val Glu Leu Leu Gly						
225		230		235		240
Leu Leu Pro Arg Lys Leu Gly Ser Arg Tyr Val Ile Cys Pro Ile Thr						
		245		250		255
Gly Lys Ile Thr Val Gly Ser Lys Ile Val Cys Ser Ser Thr His Lys						
		260		265		270
Ala His Gly Arg Val Arg Thr Asp Gly Leu Ala Thr His Asn Thr Ile						
		275		280		285
Thr Gly Ala Lys Phe Asn Val Leu Asn Arg Gly Asn Ile Leu His Glu						
		290		295		300
Ile Leu Ile Ala Gln Arg Pro Ser Cys Gly Asn Arg Arg Lys Val Pro						
305		310		315		320
Pro Phe Leu Phe Gly Lys Ala Arg Arg Thr Val Gly Thr Lys Cys Ser						
		325		330		335
Gly Lys His Ile Thr Ile Leu Lys Ile Val His Asp Thr Gly His Ser						
		340		345		350
Arg His Gln Arg Pro Leu Leu Val Thr Ile Val Cys Ile Thr Arg Gly						
		355		360		365
Ser His Thr His Ile Pro Pro Ala His Thr Leu Gly Gln Gln Val Val						
		370		375		380
Thr Gly Tyr Thr His Cys Pro Gly Phe Gly Gly Gly His Leu Ile Tyr						
385		390		395		400
Ser Arg Gly Cys Gln Met Met Val Ile Pro Gly Thr Cys Ile Cys Gln						
		405		410		415
Ile Val Gly Ala Leu Gln His Gln Thr Ile Ser Ile Val Ile Ala His						
		420		425		430
Thr Thr Leu Gly Pro His Ser Phe Gly Ala Glu Thr Ile Thr Phe Pro						
		435		440		445
Val Ile Ile Val His Ala Ile Gly Cys Gly Glu Cys Gln Pro Leu His						
		450		455		460
Tyr Ile Lys Ala Gln Ile Asn Thr Ser Val Glu Asn Ile Gly His Cys						
465		470		475		480
Leu Ser Arg Leu Gln Leu						
		485				

&lt;210&gt; 6736

&lt;211&gt; 342

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6736

Ile Lys Arg Lys Met Arg Thr Ile Ala Cys Lys Thr Val Trp Ala Leu  
 1 5 10 15  
 Leu Ile Gly Val Ser Leu Val Leu Ser Leu Asn Ser Cys Ser Lys Asp  
 20 25 30  
 Pro Val Ile Pro Glu Asp Glu Thr Lys Asn Lys Leu His Glu Asp Pro  
 35 40 45  
 Ala Lys Met Thr Val Arg Leu Val Glu Cys His Leu His Ala Asp Trp  
 50 55 60  
 Asn Glu Ile Gln Lys Ala Gly Gly Pro His Gln Asn Pro Glu Ser Pro  
 65 70 75 80  
 Ala Arg Tyr Met Lys Arg Val Gln Glu Ile Thr Tyr Glu Leu Lys Thr  
 85 90 95  
 Gly Ser Gly Trp Thr Leu Ala Glu Gly Ser Gln Gly Lys Phe Tyr Val  
 100 105 110  
 Gln Lys Asn Gly Glu Tyr Lys Asn Gly Asn Asn Phe Thr Pro Ala Pro  
 115 120 125  
 Val Tyr Leu Met Phe Ile Tyr Tyr Tyr Asn Ser Lys Gly Glu Leu Met  
 130 135 140  
 Asn Gly Gln Phe Val Glu Asn Gly Gln Glu Asn Ile His Gln His Phe  
 145 150 155 160  
 Phe Thr Pro Glu Asn Val Arg Pro Thr Phe Asp Gly Lys Pro Glu Ala  
 165 170 175  
 Asp Asp Asn Asp Pro Glu Ala Leu Val Asp Tyr Leu Tyr Val Asp Thr  
 180 185 190  
 Thr Pro Trp Asp Lys Thr Lys His Asp Asn Glu Ala Glu Ile Thr Gly  
 195 200 205  
 Ser Thr Asn Pro Val Gly Leu Lys Gly Val Ile Arg Phe Leu Lys Asp  
 210 215 220  
 Arg Lys Glu Phe Asp Leu Lys Leu Arg Leu Tyr His Gly Tyr Asn Ser  
 225 230 235 240  
 Lys Lys Asn Pro Gln Thr Asn Gly Phe Asp Pro Phe Tyr Lys Pro Ser  
 245 250 255  
 Gly Val Leu Ile Gln Arg Gly Thr Trp Asp Ile Asn Leu Ser Ile Pro  
 260 265 270  
 Val Val Val Phe Trp Ser Arg Glu Glu Phe Val Asp Val Asp Pro Glu  
 275 280 285  
 Ala Asp Val Asn Leu Ile Gly Glu Asp Ser Leu Asp Glu Asp Ser Asn  
 290 295 300  
 Arg Thr Leu His Ser Ile Met Lys Thr Phe Ser Leu Thr Trp Lys Glu  
 305 310 315 320  
 Ala Leu Glu Glu Phe Ile Ser Tyr Thr Tyr Gln Ala Gly Asp Val Glu  
 325 330 335  
 Ala Gly Ser Ile Trp Leu  
 340

&lt;210&gt; 6737

&lt;211&gt; 65

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6737

Cys His Gly Asn Asp Leu His Thr Pro Phe Pro Tyr Gln Leu Lys Ser  
 1 5 10 15  
 His Val Gln Val Thr Tyr Pro Ser Phe Arg Lys His Met Thr Gly Lys  
 20 25 30  
 Ala Gly Ala Glu Asn Thr Glu Lys Thr Ile Gln Asn Leu Val His Asp  
 35 40 45  
 Ile Lys Lys Leu Tyr Ile Glu Asn Gln Arg Ser Asp Pro Pro Ile Asn



50

55

60

Trp  
65

<210> 6738  
<211> 260  
<212> PRT  
<213> B.fragilis

&lt;400&gt; 6738

Arg	Gly	Glu	Asp	Ala	Ala	Arg	Pro	Arg	Ala	Thr	Ser	Ala	Arg	Arg	Arg
1				5					10				15		
Ala	Pro	Ala	Pro	Thr	His	Asp	Ala	Asp	Arg	Ser	Thr	Arg	Ala	Pro	Arg
			20					25					30		
Thr	Thr	Gly	Arg	Ala	Pro	Pro	Ala	Arg	Thr	Gly	Thr	Pro	Gln	Pro	Thr
		35					40					45			
Thr	Pro	Asp	Arg	Ala	Ala	Arg	Arg	Ala	Arg	Gly	Ala	Arg	Glu	Arg	Gly
	50					55					60				
Arg	Lys	Arg	Arg	Arg	Lys	Thr	Arg	Lys	Lys	Lys	Glu	Glu	Lys	Lys	Lys
65					70					75					80
Lys	Thr	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				85					90					95	
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
			100					105					110		
Lys	Lys	Lys	Lys	Lys	Asn	Lys	Lys	Lys	Lys	Lys	Lys	Arg	Lys	Lys	Lys
			115				120					125			
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
			130				135				140				
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
145						150				155					160
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				165					170					175	
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
			180					185					190		
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
			195				200					205			
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
			210				215				220				
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
225						230				235					240
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				245					250					255	
Thr	Pro	Met	Asn												
			260												

<210> 6739  
<211> 109  
<212> PRT  
<213> B.fragilis

&lt;400&gt; 6739

Gln	Thr	His	Arg	Gly	Cys	Thr	Glu	Glu	Met	Arg	Glu	Lys	Asn	Asp	Asp
1				5					10				15		
Asp	Ile	Cys	Phe	Pro	Gly	Asp	Lys	Ile	Pro	Tyr	Arg	Pro	Ala	Ser	Arg
			20					25					30		
Asn	Ile	Ile	Val	Tyr	Lys	Asn	Pro	Cys	Leu	Asp	Lys	Arg	Gly	Glu	Arg
		35					40					45			
Lys	Glu	Thr	Asp	Gly	Thr	Ile	Phe	Arg	Arg	Ile	Val	Thr	Gly	Val	Ser
	50					55						60			

Leu Phe Val Met Gly Tyr Ala Arg Met Phe Pro Val Asn Met Lys Ser  
 65 70 75 80  
 Phe His Glu Glu Lys Gly His Gln Cys Gln Gln Gln His Thr Cys Tyr  
 85 90 95  
 Asp Ser Pro Leu Ser Leu Ser Phe Phe Arg Thr Ile His  
 100 105

<210> 6740

<211> 259

<212> PRT

<213> B.fragilis

<400> 6740

Gly Ala Ala Arg Thr Pro Arg Asp Arg Ala Gln Gln Ala Arg Ala Asp  
 1 5 10 15  
 Glu Pro Arg Arg Pro Arg Thr Thr Arg Thr Gly Ala His Glu His Arg  
 20 25 30  
 Ala Arg Gln Ala Gly Pro Arg Pro Arg Glu Gln Ala Arg Arg Asn Pro  
 35 40 45  
 Gln Pro Gln Thr Ala Arg Arg Ala Ala His Gly Glu Gln Gly Arg Glu  
 50 55 60  
 Gly Gly Arg Asp Gly Gly Lys Arg Glu Lys Lys Arg Lys Lys Lys Lys  
 65 70 75 80  
 Lys Lys Pro Arg Lys Lys Lys Lys Lys Lys Lys Lys Lys Arg Lys  
 85 90 95  
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys  
 100 105 110  
 Lys Lys Lys Lys Lys Lys Thr Lys Lys Lys Lys Lys Gly Lys Lys  
 115 120 125  
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys  
 130 135 140  
 Lys Lys Lys Arg Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys  
 145 150 155 160  
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys  
 165 170 175  
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys  
 180 185 190  
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys  
 195 200 205  
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys  
 210 215 220  
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys  
 225 230 235 240  
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys  
 245 250 255  
 Lys His Gln

<210> 6741

<211> 512

<212> PRT

<213> B.fragilis

<400> 6741

Phe Leu Asn Gly Arg Ser Gln Pro Lys Leu Thr Pro Glu Asn Phe Phe  
 1 5 10 15  
 Ser Thr Gln Asp Glu Leu Asn Met Ser Ile Tyr Ala Leu Tyr Gln Lys  
 20 25 30  
 Val Asn Leu Ser Gln Val Tyr Thr Asn Met Gln Leu Ser Gln Trp Gln

[illegible]

<210> 6742  
 <211> 278  
 <212> PRT  
 <213> B.fragilis

<400> 6742

Ala	Arg	Arg	Gly	Arg	Arg	Ala	Thr	Ala	Arg	Asn	Lys	Arg	Ala	Pro	Thr
1				5					10					15	
Ser	Pro	Gly	Ala	His	Ala	Arg	Arg	Gly	Gln	Glu	His	Thr	Ser	Thr	Ala
			20					25					30		
His	Asp	Arg	Gln	Gly	Pro	Ala	Arg	Ala	Asn	Arg	His	Ala	Ala	Thr	His
			35				40					45			
Asn	Pro	Arg	Pro	Arg	Gly	Ala	Pro	Arg	Thr	Gly	Ser	Lys	Gly	Glu	Arg
			50			55					60				
Glu	Glu	Glu	Thr	Glu	Glu	Asn	Ala	Lys	Lys	Lys	Gly	Arg	Lys	Lys	Lys
65					70					75					80
Lys	Asn	Gln	Glu	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Glu	Lys
				85					90					95	
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				100				105					110		
Lys	Lys	Lys	Lys	Lys	Lys	Gln	Lys	Lys	Lys	Lys	Lys	Lys	Glu	Lys	Lys
			115				120						125		
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
			130			135					140				
Lys	Lys	Lys	Glu	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
145					150					155					160
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				165					170					175	
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				180				185					190		
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				195				200					205		
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				210			215					220			
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
225					230					235					240
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				245					250					255	
Asn	Thr	Asn	Glu	Leu	Thr	Cys	Pro	Lys	Ile	Thr	Leu	Gln	Leu	Leu	Ser
			260					265					270		
Ile	Ser	Leu	Ile	Ile	Leu										
			275												

<210> 6743  
 <211> 430  
 <212> PRT  
 <213> B.fragilis

<400> 6743

Arg	Arg	Trp	Gly	Met	Met	Arg	Arg	Met	Asp	Val	His	Glu	Ala	Ala	Asn
1				5					10					15	
Arg	Arg	Leu	Lys	Ile	Ile	Phe	Asp	Tyr	Phe	Asp	Tyr	Val	Tyr	Val	Ser
			20					25					30		
Phe	Ser	Gly	Gly	Lys	Asp	Ser	Gly	Ile	Leu	Leu	His	Leu	Cys	Met	Asp
			35				40					45			
Tyr	Ile	Arg	Met	His	Ala	Pro	Gly	Arg	Lys	Leu	Gly	Val	Phe	His	Met
			50			55					60				
Asp	Tyr	Glu	Val	Gln	Tyr	Arg	Gln	Ser	Thr	Glu	Tyr	Val	Glu	Arg	Met

[illegible]

<400> 6744

Leu	Ile	Phe	Phe	Leu	Ala	Arg	Phe	Ile	Asp	Ile	Leu	Phe	Leu	Ser	Ile
1				5					10					15	
Ile	Val	Val	Asn	Ile	Asn	Met	Lys	Ser	Lys	Phe	Thr	Leu	Trp	Ser	Val
			20					25					30		
Val	Leu	Leu	Leu	Ala	Gly	Phe	Ile	Phe	Val	Gly	Cys	Asp	Asn	Glu	Arg
		35					40					45			
Thr	Glu	Asn	Ala	Ser	Asp	Phe	Gln	Thr	Gly	Ile	His	Lys	Ile	Val	Ile

50		55		60
Gln Gln Ser Gly Asp Thr	Asp Ser Phe Glu Val Ser Val Ser Ile Gly			
65	70	75	80	
Gly Ala Asp Lys Gly Gly Pro Ala Lys Leu Tyr Asn Asp Lys Gly Glu				
	85	90	95	
Tyr Ile Gly Asp Ser Tyr Ser Ala Gln Ile Arg Thr Ala Thr Met Ser				
	100	105	110	
Cys Cys Thr Asn Gly Asn Ala Phe Met Thr Cys Ala Gly Ser Val				
	115	120	125	
Ser Ser Ile Ser Glu Ala Gly Lys Arg Leu His Ile Thr Val Ile Gly				
	130	135	140	
Tyr Ile Asp Asp Lys Glu Val Asn Arg Leu Glu Lys Glu Tyr Ile Thr				
145	150	155	160	
Asp Gly Asn Thr Leu Ile Glu Thr Phe Ser Val Ser Thr Lys Glu Ile				
	165	170	175	

&lt;210&gt; 6745

&lt;211&gt; 785

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6745

Pro Val Tyr Ile Phe Ser Ser Met Thr Phe His Ala Tyr Leu Gln Tyr				
1	5	10	15	
Val Cys Leu Leu Val Val Cys Leu Cys Thr Leu Pro Ser Pro Met Glu				
	20	25	30	
Ala Arg Val Gln Ala Asp Arg Gln Ser Thr Gly Thr Arg Asp Thr Leu				
	35	40	45	
Leu Val Ile Asp Gln Glu Ser Gly Leu Pro Ile Glu Gly Ala Tyr Ile				
	50	55	60	
Leu Thr Arg Glu Arg Leu Leu Val Ser Ser Pro Arg Gly Met Ile Val				
65	70	75	80	
Phe Gly His Gly Thr Cys Phe Met Asp Thr Val Leu Val Gln Cys Leu				
	85	90	95	
Gly Tyr Gly Ser Arg Arg Val Pro Leu Asn Glu Val Phe Lys Glu Ser				
	100	105	110	
Ser Ile His Thr Val Cys Leu Ser Pro Asp Ile Gln Lys Leu Gly Glu				
	115	120	125	
Val Val Val Thr Gly Glu Arg Ala Gly Ala Ser Pro Asn Val Val Ser				
	130	135	140	
Arg Arg Leu Ser Ser Pro Glu Ile Arg Asn Ala Leu Gly Thr Ser Leu				
145	150	155	160	
Ala Thr Leu Leu Glu Arg Val Ser Gly Val Ser Ser Ile Ser Thr Gly				
	165	170	175	
Thr Thr Val Ser Lys Pro Val Ile Gln Gly Met Tyr Gly Asn Arg Ile				
	180	185	190	
Leu Ile Ile His Asn Gly Ala Arg Gln Thr Gly Gln Gln Trp Gly Ala				
	195	200	205	
Asp His Ala Pro Glu Val Asp Met Asn Gly Ser Ser Ser Val Ser Val				
	210	215	220	
Ile Lys Gly Ser Asp Ala Val Arg Tyr Gly Ser Asp Ala Leu Gly Gly				
225	230	235	240	
Ile Ile Val Met Glu Gln Ser Pro Leu Pro Phe Arg Lys Arg Ser Leu				
	245	250	255	
Gln Gly Gly Ile Ser Ala Leu Tyr Gly Ser Asn Gly Arg Arg Tyr Val				
	260	265	270	
Ala Thr Gly Gln Leu Glu Gly Ala Phe Pro Gly Asp Phe Ala Trp Arg				
	275	280	285	
Leu Gln Gly Thr Trp Ser Asn Ser Gly Asp Arg Ser Thr Ala His Tyr				

290	295	300
Leu Leu Asn Asn Thr Gly Thr Arg Glu Tyr His Ala Ser Ala Ser Leu		
305	310	315
Gly Tyr Asp Arg Gly Arg Leu Arg Val Glu Gly Phe Tyr Ser Arg Phe		320
	325	330
		335
Tyr Ser Arg Thr Gly Val Met Leu Ser Ala Gln Met Gly Ser Glu Asp		
	340	345
		350
Leu Leu Ala Glu Arg Ile Arg Leu Gly Arg Pro Leu His Thr Asp Pro		
	355	360
		365
Phe Ser Arg Gly Ile Arg Ala Pro Cys Gln Glu Val Thr His Gln Ile		
	370	375
		380
Thr Phe Gly Arg Met Arg Leu Gly Met Lys Lys Gly Gly Ser Ile His		
	385	390
		395
Trp Gln Ser Thr Trp Gln Lys Asp Asp Arg Gln Glu Asn Arg Val Arg		
	405	410
		415
Arg Leu Asp Ser Asn Ile Pro Ala Val Ser Leu His Leu Asn Ser Phe		
	420	425
		430
Gln His Leu Leu Arg Trp Lys Arg Asp Tyr Arg Ser Trp Gln Val Glu		
	435	440
		445
Ala Gly Gly Gln Val Met Phe Ile Glu Asn His Ser Arg Ala Gly Thr		
	450	455
		460
Gly Phe Val Pro Val Ile Pro Asn Tyr Thr Glu Thr Gln Ala Gly Ile		
	465	470
		475
Tyr Gly Ile Gly Lys Tyr His Leu Ala Arg Gly Gly Val Glu Ala Gly		
	485	490
		495
Leu Arg Leu Asp Met Gln Glu Thr Arg Ala Ser Gly Tyr Asp Trp Thr		
	500	505
		510
Gly Ser Pro Tyr Gly Gly Thr Arg Lys Phe Asn Asn Val Ser Tyr Ser		
	515	520
		525
Leu Gly Gly His Tyr Gln Leu Ser Arg Arg Trp Arg Leu Thr Ser Asn		
	530	535
		540
Phe Gly Leu Ala Trp Arg Ala Pro His Val Tyr Glu Leu Tyr Ser Asn		
	545	550
		555
Gly Asn Glu Leu Gly Ser Gly Met Phe Val Arg Gly Asp Ser Ala Met		
	565	570
		575
His Ser Glu Arg Ser Tyr Lys Trp Ile Ser Ser Leu Arg Tyr Gly Asp		
	580	585
		590
Gly Met Phe Ser Val Cys Leu Asp Gly Tyr Leu Gln Trp Val Asp Gly		
	595	600
		605
Tyr Ile Tyr Asp Gly Pro Glu Lys Glu Thr Val Thr Val Ile Ser Gly		
	610	615
		620
Ala Tyr Pro Val Phe Gln Tyr Arg Gln Thr Pro Ala Phe Phe Arg Gly		
	625	630
		635
Met Asp Phe Asp Leu Arg Phe Thr Pro Gly Gly Ser Trp Asp Tyr His		
	645	650
		655
Ala Val Val Ser Phe Ile Arg Ala Asn Glu Arg Thr Lys Gly Asn Tyr		
	660	665
		670
Leu Pro Tyr Ile Pro Ser Phe Arg Phe Ser His Glu Leu Ala Trp Ile		
	675	680
		685
His Glu Thr Lys Ser His Leu Arg Leu Arg Leu Asn Ile Arg His Arg		
	690	695
		700
Phe Thr Ala Lys Gln Arg Arg Phe Asp Pro Asp Thr Asp Leu Ile Pro		
	705	710
		715
Tyr Thr Pro Pro Ala Tyr His Leu Leu Gly Phe Asp Ala Ala Leu Glu		
	725	730
		735
Leu Pro Val Lys Arg Gly His Gln Val Arg Phe Met Leu Ser Ala Asp		
	740	745
		750
Asn Leu Leu Asn Arg Glu Tyr Lys Glu Tyr Thr Asn Arg Ser Arg Tyr		
	755	760
		765

3291  
 3292  
 3293  
 3294  
 3295  
 3296  
 3297  
 3298  
 3299  
 3300  
 3301  
 3302  
 3303  
 3304  
 3305  
 3306  
 3307  
 3308  
 3309  
 3310  
 3311  
 3312  
 3313  
 3314  
 3315  
 3316  
 3317  
 3318  
 3319  
 3320  
 3321  
 3322  
 3323  
 3324  
 3325  
 3326  
 3327  
 3328  
 3329  
 3330  
 3331  
 3332  
 3333  
 3334  
 3335  
 3336  
 3337  
 3338  
 3339  
 3340  
 3341  
 3342  
 3343  
 3344  
 3345  
 3346  
 3347  
 3348  
 3349  
 3350  
 3351  
 3352  
 3353  
 3354  
 3355  
 3356  
 3357  
 3358  
 3359  
 3360  
 3361  
 3362  
 3363  
 3364  
 3365  
 3366  
 3367  
 3368  
 3369  
 3370  
 3371  
 3372  
 3373  
 3374  
 3375  
 3376  
 3377  
 3378  
 3379  
 3380  
 3381  
 3382  
 3383  
 3384  
 3385  
 3386  
 3387  
 3388  
 3389  
 3390  
 3391  
 3392  
 3393  
 3394  
 3395  
 3396  
 3397  
 3398  
 3399  
 3400  
 3401  
 3402  
 3403  
 3404  
 3405  
 3406  
 3407  
 3408  
 3409  
 3410  
 3411  
 3412  
 3413  
 3414  
 3415  
 3416  
 3417  
 3418  
 3419  
 3420  
 3421  
 3422  
 3423  
 3424  
 3425  
 3426  
 3427  
 3428  
 3429  
 3430  
 3431  
 3432  
 3433  
 3434  
 3435  
 3436  
 3437  
 3438  
 3439  
 3440  
 3441  
 3442  
 3443  
 3444  
 3445  
 3446  
 3447  
 3448  
 3449  
 3450  
 3451  
 3452  
 3453  
 3454  
 3455  
 3456  
 3457  
 3458  
 3459  
 3460  
 3461  
 3462  
 3463  
 3464  
 3465  
 3466  
 3467  
 3468  
 3469  
 3470  
 3471  
 3472  
 3473  
 3474  
 3475  
 3476  
 3477  
 3478  
 3479  
 3480  
 3481  
 3482  
 3483  
 3484  
 3485  
 3486  
 3487  
 3488  
 3489  
 3490  
 3491  
 3492  
 3493  
 3494  
 3495  
 3496  
 3497  
 3498  
 3499  
 3500  
 3501  
 3502  
 3503  
 3504  
 3505  
 3506  
 3507  
 3508  
 3509  
 3510  
 3511  
 3512  
 3513  
 3514  
 3515  
 3516  
 3517  
 3518  
 3519  
 3520  
 3521  
 3522  
 3523  
 3524  
 3525  
 3526  
 3527  
 3528  
 3529  
 3530  
 3531  
 3532  
 3533  
 3534  
 3535  
 3536  
 3537  
 3538  
 3539  
 3540  
 3541  
 3542  
 3543  
 3544  
 3545  
 3546  
 3547  
 3548  
 3549  
 3550  
 3551  
 3552  
 3553  
 3554  
 3555  
 3556  
 3557  
 3558  
 3559  
 3560  
 3561  
 3562  
 3563  
 3564  
 3565  
 3566  
 3567  
 3568  
 3569  
 3570  
 3571  
 3572  
 3573  
 3574  
 3575  
 3576  
 3577  
 3578  
 3579  
 3580  
 3581  
 3582  
 3583  
 3584  
 3585  
 3586  
 3587  
 3588  
 3589  
 3590  
 3591  
 3592  
 3593  
 3594  
 3595  
 3596  
 3597  
 3598  
 3599  
 3600  
 3601  
 3602  
 3603  
 3604  
 3605  
 3606  
 3607  
 3608  
 3609  
 3610  
 3611  
 3612  
 3613  
 3614  
 3615  
 3616  
 3617  
 3618  
 3619  
 3620  
 3621  
 3622  
 3623  
 3624  
 3625  
 3626  
 3627  
 3628  
 3629  
 3630  
 3631  
 3632  
 3633  
 3634  
 3635  
 3636  
 3637  
 3638  
 3639  
 3640  
 3641  
 3642  
 3643  
 3644  
 3645  
 3646  
 3647  
 3648  
 3649  
 3650  
 3651  
 3652  
 3653  
 3654  
 3655  
 3656  
 3657  
 3658  
 3659  
 3660  
 3661  
 3662  
 3663  
 3664  
 3665  
 3666  
 3667  
 3668  
 3669  
 3670  
 3671  
 3672  
 3673  
 3674  
 3675  
 3676  
 3677  
 3678  
 3679  
 3680  
 3681  
 3682  
 3683  
 3684  
 3685  
 3686  
 3687  
 3688  
 3689  
 3690  
 3691  
 3692  
 3693  
 3694  
 3695  
 3696  
 3697  
 3698  
 3699  
 3700  
 3701  
 3702  
 3703  
 3704  
 3705  
 3706  
 3707  
 3708  
 3709  
 3710  
 3711  
 3712  
 3713  
 3714  
 3715  
 3716  
 3717  
 3718  
 3719  
 3720  
 3721  
 3722  
 3723  
 3724  
 3725  
 3726  
 3727  
 3728  
 3729  
 3730  
 3731  
 3732  
 3733  
 3734  
 3735  
 3736  
 3737  
 3738  
 3739  
 3740  
 3741  
 3742  
 3743  
 3744  
 3745  
 3746  
 3747  
 3748  
 3749  
 3750  
 3751  
 3752  
 3753  
 3754  
 3755  
 3756  
 3757  
 3758  
 3759  
 3760  
 3761  
 3762  
 3763  
 3764  
 3765  
 3766  
 3767  
 3768  
 3769  
 3770  
 3771  
 3772  
 3773  
 3774  
 3775  
 3776  
 3777  
 3778  
 3779  
 3780  
 3781  
 3782  
 3783  
 3784  
 3785  
 3786  
 3787  
 3788  
 3789  
 3790  
 3791  
 3792  
 3793  
 3794  
 3795  
 3796  
 3797  
 3798  
 3799  
 3800  
 3801  
 3802  
 3803  
 3804  
 3805  
 3806  
 3807  
 3808  
 3809  
 3810  
 3811  
 3812  
 3813  
 3814  
 3815  
 3816  
 3817  
 3818  
 3819  
 3820  
 3821  
 3822  
 3823  
 3824  
 3825  
 3826  
 3827  
 3828  
 3829  
 3830  
 3831  
 3832  
 3833  
 3834  
 3835  
 3836  
 3837  
 3838  
 3839  
 3840  
 3841  
 3842  
 3843  
 3844  
 3845  
 3846  
 3847  
 3848  
 3849  
 3850  
 3851  
 3852  
 3853  
 3854  
 3855  
 3856  
 3857  
 3858  
 3859  
 3860  
 3861  
 3862  
 3863  
 3864  
 3865  
 3866  
 3867  
 3868  
 3869  
 3870  
 3871  
 3872  
 3873  
 3874  
 3875  
 3876  
 3877  
 3878  
 3879  
 3880  
 3881  
 3882  
 3883  
 3884  
 3885  
 3886  
 3887  
 3888  
 3889  
 3890  
 3891  
 3892  
 3893  
 3894  
 3895  
 3896  
 3897  
 3898  
 3899  
 3900  
 3901  
 3902  
 3903  
 3904  
 3905  
 3906  
 3907  
 3908  
 3909  
 3910  
 3911  
 3912  
 3913  
 3914  
 3915  
 3916  
 3917  
 3918  
 3919  
 3920  
 3921  
 3922  
 3923  
 3924  
 3925  
 3926  
 3927  
 3928  
 3929  
 3930  
 3931  
 3932  
 3933  
 3934  
 3935  
 3936  
 3937  
 3938  
 3939  
 3940  
 3941  
 3942  
 3943  
 3944  
 3945  
 3946  
 3947  
 3948  
 3949  
 3950  
 3951  
 3952  
 3953  
 3954  
 3955  
 3956  
 3957  
 3958  
 3959  
 3960  
 3961  
 3962  
 3963  
 3964  
 3965  
 3966  
 3967  
 3968  
 3969  
 3970  
 3971  
 3972  
 3973  
 3974  
 3975  
 3976  
 3977  
 3978  
 3979  
 3980  
 3981  
 3982  
 3983  
 3984  
 3985  
 3986  
 3987  
 3988  
 3989  
 3990  
 3991  
 3992  
 3993  
 3994  
 3995  
 3996  
 3997  
 3998  
 3999  
 4000

Tyr Ala His Asp Met Gly Arg Asp Val Arg Cys Gly Val Asn Trp Ile  
 770 775 780

Phe  
 785

<210> 6746  
 <211> 138  
 <212> PRT  
 <213> B.fragilis

<400> 6746

Arg Ile Gly Ile Met Asn Ile Leu Lys Leu Gln Gly Leu Asp Gly Arg  
 1 5 10 15  
 Leu Phe Asp Leu Val Ala Pro Leu Val Met Asn Pro Ala Val Leu Arg  
 20 25 30  
 Gln Asn Asn Asn Tyr Pro Phe Lys Thr Thr Arg Asn His Val Trp Tyr  
 35 40 45  
 Ile Ala Met Asp Glu Gln Arg Val Leu Gly Phe Met Pro Val Lys Met  
 50 55 60  
 Thr Leu Thr Asn Asn Cys Ile Asp Asn Tyr Tyr Ile Ser Gly Asp Asn  
 65 70 75 80  
 Ser Ser Val Ile Glu Val Leu Leu Asp Arg Ile Ile His Asp Phe Ser  
 85 90 95  
 Ser Asp Gly Ser Leu Val Ala Val Val His Glu Arg His Val Glu Asp  
 100 105 110  
 Phe Ser Met Lys Asn Phe Ile Pro Cys Val Glu Trp Lys Lys Tyr Val  
 115 120 125  
 Lys Met Arg Tyr His Glu Gly Gly Gly Ala  
 130 135

<210> 6747  
 <211> 177  
 <212> PRT  
 <213> B.fragilis

<400> 6747

Ile Val Ile Val Met Ser Ser Phe Lys Ser Pro Ala Tyr Asn Val Lys  
 1 5 10 15  
 Ala Val Pro Val Glu Lys Ile Val Ala Asn Ser Tyr Asn Pro Asn Val  
 20 25 30  
 Val Ala Pro Pro Glu Met Lys Leu Leu Glu Leu Ser Ile Trp Glu Asp  
 35 40 45  
 Gly Tyr Thr Met Pro Leu Val Cys Tyr Tyr Arg Glu Glu Glu Asp Ile  
 50 55 60  
 Tyr Glu Leu Val Asp Gly Tyr His Arg Tyr Leu Val Met Lys Thr Ser  
 65 70 75 80  
 Val Arg Ile Tyr Lys Arg Glu Asn Gly Leu Leu Pro Val Thr Val Ile  
 85 90 95  
 Asn Lys Asp Ile Ser Asn Arg Met Ala Ser Thr Ile Arg His Asn Arg  
 100 105 110  
 Ala Arg Gly Met His Ser Leu Glu Leu Met Thr Gly Ile Val Ala Glu  
 115 120 125  
 Leu Ser Lys Ser Gly Met Ser Asp Ser Trp Ile Met Arg Asn Ile Gly  
 130 135 140  
 Met Asp Lys Asn Glu Leu Arg Phe Lys Gln Ile Ser Gly Leu Ala  
 145 150 155 160  
 Glu Leu Phe Arg Asp Arg Ser Phe Gly Leu Ser Asp Asp Trp Leu Glu  
 165 170 175

Glu



<210> 6748  
 <211> 92  
 <212> PRT  
 <213> B.fragilis

<400> 6748

Ser	Ser	Cys	Val	Gly	Trp	Asn	Ser	Leu	Phe	Ile	Asn	Leu	Gln	Ala	Ala
1				5					10					15	
Gly	Gly	Ala	Ala	Phe	Phe	Val	Leu	Cys	Asn	Glu	Lys	Ile	Pro	Ser	Ala
			20					25					30		
Met	Leu	Asn	Pro	Arg	Gly	Leu	Leu	Gly	Asp	Val	Leu	Gly	His	Ala	Leu
		35					40					45			
Pro	Ser	His	Pro	Val	Pro	Phe	Phe	Met	Phe	Gly	Lys	Leu	Lys	Lys	Ile
		50				55					60				
Leu	Tyr	Ile	Gln	Asp	Val	Pro	Phe	Pro	Tyr	Arg	Arg	Val	Trp	Asn	Arg
65					70					75					80
Leu	Pro	Val	Phe	Arg	Ala	Ile	Phe	Pro	Leu	Gly	Tyr				
				85					90						

<210> 6749  
 <211> 501  
 <212> PRT  
 <213> B.fragilis

<400> 6749

Asn	Leu	Pro	Leu	Ala	Thr	Lys	Pro	Pro	Leu	Pro	Ser	Ile	Ala	Phe	Ala
1				5					10					15	
His	Leu	Ser	Ile	Ala	Ala	Tyr	Phe	Cys	Phe	Tyr	Lys	Ile	Lys	Arg	Ser
			20					25					30		
Thr	Ser	Met	Thr	Asn	Val	Asn	Arg	Ile	Thr	Leu	Ile	Thr	Val	Cys	Leu
		35					40					45			
Ala	Ala	Ile	Leu	Pro	Gly	Asn	Gly	Leu	Trp	Ala	Gln	Gln	Thr	Glu	Ala
		50				55					60				
Thr	Gly	Thr	Ser	Gln	Thr	Ala	Asp	Ser	Val	Ser	Met	Pro	Ala	Gln	Trp
65					70					75					80
Asp	Leu	Gln	Ser	Cys	Ile	Asp	Tyr	Ala	Leu	Gln	Gln	Asn	Ile	Ser	Ile
			85						90					95	
Arg	Arg	Asn	Arg	Ile	Asn	Ala	Gln	Ser	Thr	Gln	Val	Asp	Val	Lys	Thr
		100					105						110		
Ala	Lys	Ala	Ala	Leu	Phe	Pro	Ser	Leu	Ser	Phe	Ser	Ser	Ser	Gln	Asn
		115					120					125			
Leu	Val	Asn	Arg	Pro	Tyr	Gln	Glu	Ser	Ser	Ser	Ile	Ile	Ser	Gly	Ser
		130				135					140				
Glu	Val	Leu	Lys	Ser	Ser	Asn	Lys	Thr	Thr	Tyr	Asn	Gly	Asn	Tyr	Gly
145					150					155					160
Leu	Asn	Ala	Gln	Trp	Thr	Val	Tyr	Asn	Gly	Ser	Lys	Arg	Leu	Lys	Thr
			165						170					175	
Ile	Glu	Gln	Glu	Lys	Leu	Asn	Asn	Arg	Val	Ala	Asp	Leu	Asp	Val	Ala
		180					185						190		
Thr	Ser	Glu	Asn	Asp	Ile	Glu	Gln	Ser	Ile	Ala	Gln	Val	Tyr	Ile	Gln
		195					200					205			
Ile	Leu	Tyr	Ala	Ala	Glu	Ser	Val	Lys	Val	Asn	Glu	Asn	Thr	Leu	Gln
		210				215					220				
Val	Ser	Glu	Ala	Gln	Arg	Asp	Arg	Gly	Lys	Gln	Leu	Leu	Asp	Ala	Gly
225					230					235					240
Ser	Ile	Ala	Arg	Ser	Asp	Tyr	Ala	Gln	Leu	Glu	Ala	Gln	Val	Ser	Thr
				245					250						255

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65  
66  
67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82  
83  
84  
85  
86  
87  
88  
89  
90  
91  
92  
93  
94  
95  
96  
97  
98  
99  
100  
101  
102  
103  
104  
105  
106  
107  
108  
109  
110  
111  
112  
113  
114  
115  
116  
117  
118  
119  
120  
121  
122  
123  
124  
125  
126  
127  
128  
129  
130  
131  
132  
133  
134  
135  
136  
137  
138  
139  
140  
141  
142  
143  
144  
145  
146  
147  
148  
149  
150  
151  
152  
153  
154  
155  
156  
157  
158  
159  
160  
161  
162  
163  
164  
165  
166  
167  
168  
169  
170  
171  
172  
173  
174  
175  
176  
177  
178  
179  
180  
181  
182  
183  
184  
185  
186  
187  
188  
189  
190  
191  
192  
193  
194  
195  
196  
197  
198  
199  
200  
201  
202  
203  
204  
205  
206  
207  
208  
209  
210  
211  
212  
213  
214  
215  
216  
217  
218  
219  
220  
221  
222  
223  
224  
225  
226  
227  
228  
229  
230  
231  
232  
233  
234  
235  
236  
237  
238  
239  
240  
241  
242  
243  
244  
245  
246  
247  
248  
249  
250  
251  
252  
253  
254  
255  
256  
257  
258  
259  
260  
261  
262  
263  
264  
265  
266  
267  
268  
269  
270  
271  
272  
273  
274  
275  
276  
277  
278  
279  
280  
281  
282  
283  
284  
285  
286  
287  
288  
289  
290  
291  
292  
293  
294  
295  
296  
297  
298  
299  
300  
301  
302  
303  
304  
305  
306  
307  
308  
309  
310  
311  
312  
313  
314  
315  
316  
317  
318  
319  
320  
321  
322  
323  
324  
325  
326  
327  
328  
329  
330  
331  
332  
333  
334  
335  
336  
337  
338  
339  
340  
341  
342  
343  
344  
345  
346  
347  
348  
349  
350  
351  
352  
353  
354  
355  
356  
357  
358  
359  
360  
361  
362  
363  
364  
365  
366  
367  
368  
369  
370  
371  
372  
373  
374  
375  
376  
377  
378  
379  
380  
381  
382  
383  
384  
385  
386  
387  
388  
389  
390  
391  
392  
393  
394  
395  
396  
397  
398  
399  
400

Asp Arg Tyr Gln Leu Val Thr Ala Gln Ala Thr Leu Gln Asp Tyr Lys  
 260 265 270  
 Leu Gln Leu Lys Gln Leu Leu Glu Leu Asp Gly Glu Gln Glu Met Gln  
 275 280 285  
 Val Tyr Leu Pro Ala Leu Gly Asp Glu Asn Val Leu Ser Pro Leu Pro  
 290 295 300  
 Thr Lys Thr Asp Val Phe Arg Ser Ala Val Ala Leu Arg Pro Glu Ile  
 305 310 315 320  
 Glu Ala Ser Lys Leu Ser Val Glu Ala Ser Glu Leu Gly Ile Gly Ile  
 325 330 335  
 Ala Lys Ser Gly Tyr Leu Pro Ser Val Ser Leu Thr Ala Gly Ile Gly  
 340 345 350  
 Thr Asn His Thr Ser Gly Ser Asp Phe Thr Phe Gly Glu Gln Val Lys  
 355 360 365  
 Asn Gly Trp Asn Asn Ser Ile Gly Leu Ser Ile Ser Val Pro Ile Phe  
 370 375 380  
 Asn Asn Arg Gln Thr Lys Ser Ala Val Glu Lys Ala Lys Leu Gln Tyr  
 385 390 395 400  
 Gln Thr Ser Gln Leu Thr Leu Leu Asp Glu Gln Lys Thr Leu Tyr Lys  
 405 410 415  
 Thr Ile Glu Gly Leu Trp Leu Asp Ala Asn Ser Ala Gln Gln Arg Tyr  
 420 425 430  
 Ala Ala Ala Ile Glu Lys Leu His Ser Thr Gln Thr Ser Tyr Glu Leu  
 435 440 445  
 Val Ser Glu Gln Phe Asn Ala Gly Met Lys Asn Thr Val Glu Leu Leu  
 450 455 460  
 Thr Glu Lys Asn Asn Leu Leu Gln Ala Gln Gln Glu Leu Leu Gln Ser  
 465 470 475 480  
 Lys Tyr Met Ala Ile Leu Asn Thr Gln Leu Leu Lys Phe Tyr Gln Gly  
 485 490 495  
 Asp Lys Ile Thr Leu  
 500

<210> 6750  
 <211> 61  
 <212> PRT  
 <213> B.fragilis

<400> 6750  
 Lys Lys Arg Pro Thr Phe Thr Gly Arg Thr Phe Phe Val Leu Phe Glu  
 1 5 10 15  
 Tyr Val Ile Tyr Ile Gln Gln Leu Asn Ser Met Ile Ile Lys Ile Thr  
 20 25 30  
 Thr Gln Gln Asn Gly Ile Arg Glu Asn His Phe Gly Arg Ile Gly Leu  
 35 40 45  
 Ser His Leu Asn Val Thr Tyr Val Ile Ile Met Thr Asn  
 50 55 60

<210> 6751  
 <211> 518  
 <212> PRT  
 <213> B.fragilis

<400> 6751  
 Gly Lys Asn Pro Ala Phe Asn Leu Lys Arg Gly Ser Leu Tyr Pro Ile  
 1 5 10 15  
 Ser Gly Val Phe Ser Gln Ala Cys Asp Glu Ile Gly Met Leu Phe Trp  
 20 25 30  
 Ala Glu Asn Ala Phe Trp Gly Ile Gly Gly His Lys Gly Asp Asp Tyr

Trp	Asn	Ala	Ser	Ala	Tyr	Pro	Val	Asn	Glu	Ser	Asp	Arg	Ala	Glu	Phe
50						55					60				
Glu	Asn	Ser	Val	Lys	Ala	Gln	Leu	Lys	Glu	Leu	Ile	Arg	Ile	His	Arg
65				70						75				80	
Asn	His	Pro	Ser	Ile	Ile	Val	Trp	Ser	Met	Ser	Asn	Glu	Pro	Phe	Phe
			85					90					95		
Thr	Ala	Pro	Glu	Thr	Ile	Asp	Pro	Met	Arg	Lys	Leu	Leu	Glu	Glu	Thr
			100					105					110		
Val	Lys	Leu	Ser	Lys	Gln	Leu	Asp	Pro	Thr	Arg	Pro	Ala	Ala	Val	Gly
		115					120					125			
Gly	Ala	Gln	Arg	Pro	Leu	Gly	Glu	Lys	Arg	Ile	Asp	Lys	Leu	Gly	Asp
	130					135					140				
Ile	Ala	Gly	Tyr	Asn	Gly	Asp	Gly	Ser	Tyr	Ile	Pro	Glu	Phe	Gln	Gln
145				150						155				160	
Pro	Gly	Met	Pro	Thr	Val	Val	Ser	Glu	Tyr	Gly	Ser	Thr	Thr	Ala	Asp
			165					170						175	
Arg	Pro	Gly	Glu	Tyr	Asp	Pro	Gly	Trp	Gly	Asp	Leu	Ala	Lys	Asn	Asn
		180						185					190		
Ala	Gln	Asn	Gly	Phe	Pro	Trp	Arg	Ser	Gly	Gln	Ala	Ile	Trp	Cys	Ala
	195					200					205				
Phe	Asp	His	Gly	Ser	Ile	Ala	Gly	Ser	Ala	Leu	Gly	Lys	Met	Gly	Ile
210						215					220				
Ile	Asp	Tyr	Phe	Arg	Ile	Pro	Lys	Arg	Ala	Trp	Tyr	Trp	Tyr	Arg	Asn
225				230						235				240	
Ala	Tyr	Lys	Gly	Ile	Thr	Pro	Pro	Glu	Trp	Pro	Gln	Glu	Gly	Thr	Pro
			245					250						255	
Ala	Arg	Ile	Ser	Leu	Val	Ala	Asp	Arg	Thr	Asp	Asn	Ile	Lys	Ala	Asp
		260					265						270		
Gly	Thr	Asp	Asp	Val	Met	Leu	Ser	Ile	Thr	Ile	Leu	Asp	Ala	Asn	Gly
	275					280					285				
Lys	Pro	Val	Ser	Asn	Ser	Pro	Ala	Val	Lys	Leu	Asp	Ile	Leu	Ser	Gly
	290					295				300					
Pro	Gly	Glu	Phe	Pro	Thr	Gly	Thr	Ser	Ile	Leu	Phe	Glu	Lys	Glu	Ser
305				310						315				320	
Asp	Ile	Arg	Ile	Leu	Asp	Gly	Lys	Ala	Ala	Ile	Glu	Phe	Arg	Ser	Tyr
			325					330						335	
Tyr	Ala	Gly	Glu	Thr	Val	Ile	Arg	Ala	Thr	Ser	Pro	Gly	Leu	Glu	Pro
		340						345					350		
Ala	Glu	Val	Lys	Ile	Arg	Phe	Thr	Gly	Ser	Thr	Pro	Tyr	Thr	Glu	Ala
	355					360					365				
Phe	Lys	Val	Lys	Glu	Arg	Pro	Tyr	Thr	Arg	Phe	Glu	Thr	Pro	Thr	Lys
	370					375				380					
Thr	Asp	Asn	Leu	Gln	Thr	Phe	Gly	Pro	Asn	Asn	Pro	Thr	Phe	Cys	Ser
385				390						395				400	
Ser	Ser	Ala	Asn	Gly	His	Ser	Ser	Ala	Phe	Ala	Ala	Asp	Gly	Asp	Glu
			405					410						415	
Ser	Thr	Tyr	Trp	Gln	Ala	Ser	Glu	Asn	Asp	Pro	Glu	Arg	Ser	Trp	Thr
		420						425					430		
Leu	Asp	Thr	Glu	Lys	Gly	Leu	Ser	Ile	Arg	His	Ile	Arg	Ile	Ala	Phe
	435					440					445				
Pro	Asp	Leu	Ala	Pro	Tyr	Gln	Tyr	Lys	Val	Glu	Val	Ser	Met	Asp	Arg
	450					455				460					
Glu	His	Trp	Ser	Leu	Ile	Pro	Asp	Gln	Thr	Asn	Asn	Lys	Gln	Asn	Glu
465				470						475				480	
Asn	Ile	Arg	Met	Ile	Gln	Val	Val	Pro	Gly	Ile	Gln	Gly	Arg	Phe	Val
			485					490						495	
Arg	Ile	Ser	Phe	Thr	Gly	Glu	Lys	Ala	Ala	Ile	Thr	Asp	Val	Gln	Val
		500						505					510		

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65  
66  
67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82  
83  
84  
85  
86  
87  
88  
89  
90  
91  
92  
93  
94  
95  
96  
97  
98  
99  
100

[illegible]

<213> B.fragilis

Ile	His	Ile	Thr	Ile	Met	Ala	Thr	Gln	Asn	Lys	Thr	Asp	Ile	Gly	Leu
1				5					10					15	
Ile	Gly	Leu	Ala	Val	Met	Gly	Glu	Asn	Leu	Ala	Leu	Asn	Met	Glu	Ser
			20					25					30		
Arg	Gly	Trp	Ser	Val	Ser	Val	Tyr	Asn	Arg	Thr	Val	Pro	Gly	Val	Glu
		35					40					45			
Glu	Gly	Val	Val	Glu	Arg	Phe	Ile	Asn	Gly	Arg	Ala	Lys	Gly	Lys	His
	50					55					60				
Ile	Glu	Gly	Phe	Thr	Asp	Ile	Glu	Ala	Phe	Val	Glu	Ser	Ile	Ala	Leu
65					70					75					80
Pro	Arg	Lys	Ile	Met	Met	Val	Arg	Ala	Gly	Ser	Pro	Val	Asp	Glu	
				85				90					95		
Leu	Met	Glu	Gln	Leu	Phe	Pro	Tyr	Leu	Ser	Pro	Gly	Asp	Ile	Leu	Ile
			100					105					110		
Asp	Gly	Gly	Asn	Ser	Asn	Tyr	Glu	Asp	Thr	Asn	Arg	Arg	Val	Lys	Leu
		115					120					125			
Ala	Glu	Ser	Lys	Gly	Phe	Leu	Phe	Val	Gly	Ala	Gly	Val	Ser	Gly	Gly
	130					135					140				
Glu	Glu	Gly	Ala	Leu	Asn	Gly	Ala	Ser	Ile	Met	Pro	Gly	Gly	Ser	Glu
145					150					155					160
Lys	Ala	Trp	Glu	Glu	Val	Lys	Pro	Ile	Leu	Gln	Ser	Ile	Ala	Ala	Gln
				165					170					175	
Ala	Pro	Asp	Gly	Thr	Pro	Cys	Cys	Gln	Trp	Val	Gly	Pro	Ala	Gly	Ser
			180					185					190		
Gly	His	Phe	Val	Lys	Met	Ile	His	Asn	Gly	Ile	Glu	Tyr	Gly	Asp	Met
		195					200					205			
Gln	Leu	Ile	Ala	Glu	Ala	Tyr	Trp	Val	Met	Lys	Glu	Leu	Leu	Asp	Met
	210					215					220				
Thr	Asn	Glu	Glu	Met	Ala	Ser	Val	Phe	Thr	Arg	Trp	Asn	Glu	Gly	Lys
225					230					235					240
Leu	Arg	Ser	Tyr	Leu	Ile	Glu	Ile	Thr	Gly	Asn	Ile	Leu	Arg	His	Lys
				245					250					255	
Asp	Lys	Thr	Gly	Val	Tyr	Leu	Ile	Asp	Lys	Ile	Leu	Asp	Ala	Ala	Gly
			260					265					270		
Gln	Lys	Gly	Thr	Gly	Lys	Trp	Ser	Val	Ile	Asn	Ala	Met	Glu	Leu	Gly
		275					280					285			
Met	Pro	Leu	Gly	Leu	Ile	Ala	Thr	Ala	Val	Phe	Glu	Arg	Ser	Leu	Ser
						295					300				
Ala	Arg	Lys	Glu	Leu	Arg	Glu	Ala	Ala	Ala	Arg	Gln	Tyr	Gln	Cys	Arg
305					310					315					320
His	Ser	Met	Ala	Val	Tyr	Asn	Lys	Gln	Asp	Thr	Glu	Lys	Glu	Ile	Phe
				325					330					335	
Ser	Ala	Leu	Tyr	Ala	Ser	Lys	Leu	Val	Ser	Tyr	Ala	Gln	Gly	Phe	Ala
			340					345					350		
Val	Leu	Gln	Arg	Ala	Ser	Asp									

Leu Leu Leu Ala Pro Tyr Phe Glu Glu Glu Ile Lys Gly Leu Leu Ser  
                   405                                  410                  415  
 Gly Trp Lys Asn Leu Val Ala Gln Ala Met Arg Glu Glu Leu Pro Val  
                   420                                  425                  430  
 Pro Ala Phe Ser Ser Ala Leu Asn Tyr Phe Tyr Ser Leu Val Ser Ala  
                   435                                  440                  445  
 Asp Leu Pro Ala Asn Leu Val Gln Ala Gln Arg Asp Tyr Phe Gly Ala  
                   450                                  455                  460  
 His Thr Phe Glu Arg Lys Asp Glu Leu Arg Gly Val Phe Phe His Glu  
                   465                                  470                  475                  480  
 Asn Trp Thr Gly His Gly Gly Asp Thr Lys Ser Gly Thr Tyr Asn Val  
                   485                                  490                  495

&lt;210&gt; 6753

&lt;211&gt; 136

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6753

Ser Gly Ser Thr Gln Val Trp His Val His Cys Ile Thr Ile Phe Arg  
 1                  5                                  10                  15  
 Cys Leu Val Ile Val Ser Arg Ser Arg Thr Ile Lys Phe Ser Arg Ile  
                   20                                  25                  30  
 Met Lys Lys Val Leu Val Ala Leu Val Ile Val Met Gly Leu Gly Phe  
                   35                                  40                  45  
 Ser Val Ala Lys Ala Asp Glu Pro Leu Lys Lys Lys Ser Pro Lys Val  
                   50                                  55                  60  
 Glu Gln Arg Asp Ser Arg Glu Asp Phe Thr Pro Ile Glu Val Asn Asn  
                   65                                  70                  75                  80  
 Leu Pro Glu Ala Val Ile Asp Glu Leu Ser Cys Glu Gly Ala Leu Ile  
                   85                                  90                  95  
 Lys Glu Ala Phe Ile Ala Tyr Ser Arg Ser Glu Gly Lys Leu Tyr Lys  
                   100                                  105                  110  
 Val Ile Ile Leu Ser Ser Asp Phe His Glu Gln Ala Val Phe Leu Asn  
                   115                                  120                  125  
 Glu Arg Gly Asn Ile Leu Asn Arg  
                   130                                  135

&lt;210&gt; 6754

&lt;211&gt; 74

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6754

Lys Ala Cys Thr Gln Gly His Gly Val Asp Gln Glu Glu Glu Val Ser  
 1                  5                                  10                  15  
 Pro Asn Gln Val Ala Ala Leu Arg Cys Leu Phe Thr Pro Glu Tyr Thr  
                   20                                  25                  30  
 Arg Pro Ala Ala Ile Gly Thr Thr Arg Ala Leu Leu Gln Gly Val Glu  
                   35                                  40                  45  
 Phe Gln Lys Val Ser Ala Ile Gly Gly Ala Ile Asn Gly Gly Ser Gly  
                   50                                  55                  60  
 Ser Gly Asp Ile Val Asp Asp Pro Thr Ala  
                   65                                  70

&lt;210&gt; 6755

&lt;211&gt; 383

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6755

Thr Met Gly Thr Tyr Ile Phe Leu Gln Gln Tyr Trp Trp Leu Val Val  
 1 5 10 15  
 Ser Leu Leu Gly Ala Ile Leu Val Phe Leu Leu Phe Val Gln Gly Gly  
 20 25 30  
 Asn Ser Leu Leu Phe Cys Leu Gly Lys Thr Glu Glu His Arg Lys Met  
 35 40 45  
 Met Val Asn Ser Thr Gly Arg Lys Trp Glu Phe Thr Phe Thr Thr Leu  
 50 55 60  
 Val Thr Phe Gly Gly Ala Phe Phe Ala Ser Phe Pro Leu Phe Tyr Ser  
 65 70 75 80  
 Thr Ser Phe Gly Gly Ala Tyr Trp Leu Trp Met Ile Ile Leu Phe Ser  
 85 90 95  
 Phe Val Leu Gln Ala Val Ser Tyr Glu Phe Gln Ser Lys Ala Gly Asn  
 100 105 110  
 Leu Leu Gly Lys Lys Thr Tyr Gln Thr Phe Leu Val Ile Asn Gly Val  
 115 120 125  
 Val Gly Pro Leu Leu Leu Gly Gly Ala Val Ala Thr Phe Phe Thr Gly  
 130 135 140  
 Ser Asp Phe Tyr Ile Asn Lys Gly Asn Met Val Asn Glu Val Met Pro  
 145 150 155 160  
 Val Ile Ser His Trp Gly Asn Gly Trp His Gly Leu Asp Ala Leu Thr  
 165 170 175  
 Asn Ile Trp Asn Val Ile Leu Gly Leu Ala Val Phe Phe Leu Ala Arg  
 180 185 190  
 Ala Leu Gly Ala Leu Tyr Phe Ile Asn Asn Ile Ala Asp Lys Glu Leu  
 195 200 205  
 Val Ala Lys Cys Arg Arg Ser Leu Ile Ala Asn Thr Val Leu Phe Leu  
 210 215 220  
 Val Phe Phe Leu Ala Phe Val Val Arg Thr Leu Leu Ala Asp Gly Tyr  
 225 230 235 240  
 Ala Val Asn Pro Glu Thr Lys Glu Ile Tyr Met Glu Pro Tyr Lys Tyr  
 245 250 255  
 Phe Asn Asn Phe Ile Glu Met Pro Val Val Leu Ile Val Phe Leu Val  
 260 265 270  
 Gly Val Val Leu Val Leu Phe Gly Ile Gly Lys Thr Leu Leu Lys Lys  
 275 280 285  
 Thr Phe Asp Lys Gly Ile Trp Phe Val Gly Ile Gly Thr Val Leu Thr  
 290 295 300  
 Val Leu Ala Leu Leu Leu Thr Ala Gly Tyr Asn Asn Thr Ala Tyr Tyr  
 305 310 315 320  
 Pro Ser Asn Thr Asp Ile Gln Ser Ser Leu Thr Leu Ala Asn Ser Cys  
 325 330 335  
 Ser Ser Gln Phe Thr Leu Lys Thr Met Ala Tyr Val Ser Ile Leu Val  
 340 345 350  
 Pro Phe Val Ile Ala Tyr Ile Phe Tyr Ala Trp Arg Ser Ile Asp Asn  
 355 360 365  
 Arg Lys Ile Asp Ala Lys Glu Met Asp Glu Gly Gly His Ala Tyr  
 370 375 380

&lt;210&gt; 6756

&lt;211&gt; 62

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6756

Ile Thr Arg Phe Pro Ser Asn Tyr Ile Leu Asp Phe Ile Phe Ile Ser  
 1 5 10 15

Ser Lys Ile Met Leu Ile Tyr Asn His Phe Met Ile Val Ser Tyr Phe  
 20 25 30  
 Lys Thr Thr Asp Lys Ile Ile Tyr Phe Phe Thr Phe Leu Phe Asn Leu  
 35 40 45  
 Phe Trp Val Ser Met Pro Leu Ala Ser Asn Val Phe Ile Val  
 50 55 60

<210> 6757

<211> 236

<212> PRT

<213> B.fragilis

<400> 6757

Ser Ser Ile Ala Val Lys Leu Arg Cys Ala Ile Val Asp Asp Glu Pro  
 1 5 10 15  
 Leu Ala Leu Ser Leu Leu Glu Ser Tyr Val Asn Lys Thr Pro Phe Leu  
 20 25 30  
 Glu Leu Ala Gly Lys Tyr Ser Ser Ala Val Gln Ala Met Lys Glu Leu  
 35 40 45  
 Pro Gly Asn Gln Ile Asp Leu Leu Phe Leu Asp Ile Gln Met Pro Glu  
 50 55 60  
 Leu Asn Gly Leu Glu Phe Ser Lys Met Val Ala Pro Arg Thr Arg Ile  
 65 70 75 80  
 Val Phe Thr Thr Ala Phe Gly Gln Tyr Ala Ile Asp Gly Tyr Arg Val  
 85 90 95  
 Asn Ala Leu Asp Tyr Leu Leu Lys Pro Ile Ser Tyr Val Asp Phe Leu  
 100 105 110  
 Gln Ala Ala Asn Lys Ala Leu Gln Trp Phe Glu Leu Val Gln Lys Pro  
 115 120 125  
 Glu Glu Val Asp Ser Ile Phe Val Lys Ser Asp Tyr Lys Leu Val Gln  
 130 135 140  
 Val Glu Leu Lys Lys Ile Leu Tyr Ile Glu Gly Leu Lys Asp Tyr Ile  
 145 150 155 160  
 Lys Ile Tyr Thr Glu Asp Ala Pro Lys Pro Ile Leu Ser Leu Met Ser  
 165 170 175  
 Met Lys Ser Met Glu Glu Leu Leu Pro Pro Ala Arg Phe Met Arg Val  
 180 185 190  
 His Arg Ser Phe Ile Val Gln Lys Asn Lys Ile Arg Ile Ile Asp Arg  
 195 200 205  
 Gly Arg Ile Val Phe Asp Lys Thr Tyr Ile Pro Val Ser Asp Ser Tyr  
 210 215 220  
 Lys Gln Thr Phe Gln Thr Phe Leu Asp Glu Arg Ser  
 225 230 235

<210> 6758

<211> 450

<212> PRT

<213> B.fragilis

<400> 6758

Pro Asn Thr Ala Ala Val Thr Ser Cys Cys Ala Thr Asp Lys Ser Arg  
 1 5 10 15  
 Lys Thr Ala Leu Thr Arg Thr Phe Phe Pro Gln Pro Lys His Trp Pro  
 20 25 30  
 Leu Cys Arg Tyr Lys Lys Asn Asn Arg Gln Ile Ile Met Asn Gly Thr  
 35 40 45  
 Asn Leu Phe Lys Ile Ala Leu Arg Ala Leu Asn Asn Asn Lys Leu Arg  
 50 55 60  
 Ala Phe Leu Thr Met Leu Gly Ile Ile Ile Gly Val Ala Ser Val Ile

65					70					75				80	
Thr	Met	Leu	Ala	Ile	Gly	Gln	Gly	Ser	Lys	Lys	Ser	Ile	Gln	Ala	Gln
				85					90				95		
Ile	Ser	Glu	Met	Gly	Ser	Asn	Met	Ile	Met	Ile	His	Pro	Gly	Ala	Asp
			100					105					110		
Met	Arg	Gly	Gly	Val	Arg	Gln	Asp	Pro	Ser	Ala	Met	Gln	Thr	Leu	Lys
		115					120					125			
Leu	Thr	Asp	Tyr	Glu	Thr	Leu	Arg	Asp	Glu	Thr	Ser	Phe	Leu	Ala	Ala
	130					135					140				
Val	Ser	Pro	Asn	Val	Ser	Ser	Ser	Gly	Gln	Leu	Ile	Ala	Gly	Asn	Asn
	145				150					155					160
Asn	Tyr	Pro	Ser	Ser	Val	Asn	Gly	Val	Gly	Thr	Glu	Tyr	Leu	Glu	Ile
			165						170					175	
Arg	Gln	Leu	Ser	Ile	Asp	Asn	Gly	Glu	Met	Phe	Ser	Glu	Ala	Asp	Ile
			180					185					190		
Gln	Ser	Ser	Ala	Lys	Val	Cys	Val	Ile	Gly	Lys	Thr	Ile	Val	Asp	Asn
	195						200					205			
Leu	Phe	Pro	Asp	Gly	Glu	Asp	Pro	Val	Gly	Arg	Ile	Val	Arg	Phe	Ser
	210					215					220				
Lys	Ile	Pro	Phe	Arg	Val	Val	Gly	Val	Leu	Lys	Ser	Lys	Gly	Tyr	Asn
	225				230					235					240
Ser	Met	Gly	Met	Asp	Gln	Asp	Asp	Ile	Val	Leu	Ala	Pro	Tyr	Thr	Thr
			245						250					255	
Val	Met	Lys	Arg	Leu	Leu	Ala	Gln	Thr	Tyr	Leu	Gln	Gly	Ile	Tyr	Ala
		260						265					270		
Ser	Ala	Leu	Ser	Glu	Asp	Met	Thr	Asp	Asn	Ala	Thr	Glu	Glu	Ile	Thr
		275					280					285			
Glu	Leu	Leu	Arg	Arg	Asn	His	Lys	Leu	Lys	Glu	Ala	Asp	Asp	Asp	Asp
	290					295					300				
Phe	Thr	Ile	Arg	Ser	Gln	Gln	Glu	Leu	Ser	Ser	Met	Leu	Asn	Ser	Thr
	305				310					315					320
Thr	Asp	Leu	Met	Thr	Thr	Leu	Leu	Ala	Cys	Ile	Ala	Gly	Ile	Ser	Leu
			325						330					335	
Val	Val	Gly	Gly	Ile	Gly	Ile	Met	Asn	Ile	Met	Tyr	Val	Ser	Val	Thr
		340						345					350		
Glu	Arg	Thr	Arg	Glu	Ile	Gly	Leu	Arg	Met	Ser	Val	Gly	Ala	Arg	Gly
	355						360					365			
Val	Asp	Ile	Leu	Ser	Gln	Phe	Leu	Ile	Glu	Ala	Ile	Leu	Ile	Ser	Ile
	370					375					380				
Thr	Gly	Gly	Leu	Ile	Gly	Val	Ile	Ile	Gly	Cys	Gly	Ala	Ser	Trp	Val
	385				390					395					400
Val	Lys	Ser	Val	Ala	His	Trp	Pro	Ile	Phe	Ile	Gln	Pro	Trp	Ser	Val
			405						410					415	
Phe	Leu	Ser	Phe	Ala	Val	Cys	Thr	Val	Thr	Gly	Val	Phe	Phe	Gly	Trp
		420						425				430			
Tyr	Pro	Ala	Lys	Lys	Ala	Ala	Asp	Leu	Asp	Pro	Ile	Glu	Ala	Ile	Arg
		435					440					445			
Tyr	Glu														
	450														

&lt;210&gt; 6759

&lt;211&gt; 84

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6759

Val	Val	Asn	Leu	Arg	Lys	Asn	Lys	Ser	Lys	Met	Glu	Tyr	Lys	Phe	Asp
1			5						10					15	
Glu	Gln	Ser	Val	Lys	Glu	Leu	Met	Glu	Trp	Ala	Gln	Thr	Ala	Gln	Leu



20	25	30
Pro Gln Glu Leu Glu Leu Ser Lys	Ala Glu Arg Ile Phe	Asp Val Lys
35	40	45
Leu Cys Ile Glu Ser Asp Leu Ser Cys Ile Arg Ala His Tyr Pro Asp		
50	55	60
Ala Phe Tyr Asn Pro Ala Ile Thr Arg Leu Tyr Arg Ile Arg Glu Lys		
65	70	75
Leu Glu Glu Lys		80

&lt;210&gt; 6760

&lt;211&gt; 429

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6760

Gln Ile Tyr Tyr Lys Tyr Met Gln Pro Leu Ala Glu Arg Leu Arg Pro		
1	5	10
Lys Thr Leu Asp Asp Tyr Ile Gly Gln Lys His Leu Val Gly Pro Gly		15
20	25	30
Ala Ile Leu Arg Lys Met Ile Asp Ala Gly Arg Ile Ser Ser Phe Ile		
35	40	45
Leu Trp Gly Pro Pro Gly Val Gly Lys Thr Thr Leu Ala Gln Ile Ile		
50	55	60
Ala Asn Lys Leu Glu Thr Pro Phe Tyr Thr Leu Ser Ala Val Thr Ser		
65	70	75
Gly Val Lys Asp Val Arg Glu Val Ile Asp Arg Ala Lys Ser Asn Lys		80
85	90	95
Phe Phe Thr Gln Ser Ser Pro Ile Leu Phe Ile Asp Glu Ile His Arg		
100	105	110
Phe Ser Lys Ser Gln Gln Asp Ser Leu Leu Gly Ala Val Glu His Gly		
115	120	125
Thr Val Thr Leu Ile Gly Ala Thr Thr Glu Asn Pro Ser Phe Glu Val		
130	135	140
Ile Arg Pro Leu Leu Ser Arg Cys Gln Leu Tyr Thr Leu Lys Ser Leu		
145	150	155
Glu Lys Glu Asp Leu Leu Glu Leu Leu Gln Arg Ala Ile Thr Thr Asp		
165	170	175
Val Val Leu Lys Glu Arg Lys Ile Glu Leu Lys Glu Thr Gly Ala Met		
180	185	190
Leu Arg Phe Ser Gly Gly Asp Ala Arg Lys Leu Leu Asn Ile Leu Glu		
195	200	205
Leu Val Val Glu Ser Glu Thr Glu Glu Thr Val Ile Ile Thr Asp Asp		
210	215	220
Leu Val Thr Glu Arg Leu Gln Gln Asn Pro Leu Ala Tyr Asp Lys Asp		
225	230	235
Gly Glu Met His Tyr Asp Ile Ile Ser Ala Phe Ile Lys Ser Ile Arg		
245	250	255
Gly Ser Asp Pro Asp Gly Ala Ile Tyr Trp Leu Ala Arg Met Val Glu		
260	265	270
Gly Gly Glu Asp Pro Ala Phe Ile Ala Arg Arg Leu Val Ile Ser Ala		
275	280	285
Ala Glu Asp Ile Gly Leu Ala Asn Pro Asn Ala Leu Leu Leu Ala Asn		
290	295	300
Ala Cys Phe Asp Thr Leu Met Lys Ile Gly Trp Pro Glu Gly Arg Ile		
305	310	315
Pro Leu Ala Glu Thr Thr Ile Tyr Leu Ala Thr Ser Pro Lys Ser Asn		
325	330	335
Ser Ala Tyr Asn Ala Ile Asn Asp Ala Leu Ala Leu Val Arg Glu Thr		

340	345	350
Gly Asn Leu Pro Val Pro Leu His	Leu Arg Asn Ala Pro Thr Lys Leu	
355	360	365
Met Lys Gln Leu Gly Tyr Gly Gln Glu Tyr Lys Tyr Ala His Asn Tyr		
370	375	380
Glu Gly Asn Phe Val Lys Gln Gln Phe Leu Pro Asp Glu Ile Lys Ala		
385	390	395
Lys Gln Leu Trp Gln Pro Gln His Asn Pro Ala Glu Gln Lys His Ala		
405	410	415
Glu Arg Met Lys Gln Leu Trp Gly Asn Glu Lys Asn Tyr		
420	425	

<210> 6761  
 <211> 525  
 <212> PRT  
 <213> B.fragilis

<400> 6761

Arg Leu Thr Leu Thr Thr Asn Asp Met Ile Glu Ser Ile Asp Thr Ser	
1 5 10 15	
Leu Ile Asp Trp Ser Arg Ala Gln Phe Ala Leu Thr Ala Met Tyr His	
20 25 30	
Trp Ile Phe Val Pro Leu Thr Leu Gly Leu Ala Val Val Met Ala Ile	
35 40 45	
Met Glu Thr Leu Tyr Tyr Lys Thr Gly Asn Glu Phe Trp Lys Arg Thr	
50 55 60	
Ala Lys Phe Trp Met Lys Leu Phe Gly Ile Asn Phe Ala Val Gly Val	
65 70 75 80	
Ala Thr Gly Leu Ile Leu Glu Phe Glu Phe Gly Thr Asn Trp Ser Asn	
85 90 95	
Tyr Ser Trp Phe Val Gly Asp Ile Phe Gly Ala Pro Leu Ala Ile Glu	
100 105 110	
Gly Ile Leu Ala Phe Phe Met Glu Ala Thr Phe Ile Ala Val Met Phe	
115 120 125	
Phe Gly Trp Asp Lys Val Ser Lys Arg Phe His Leu Ile Ser Thr Trp	
130 135 140	
Leu Thr Gly Leu Gly Ala Thr Ile Ser Ala Trp Trp Ile Leu Val Ala	
145 150 155 160	
Asn Ala Trp Met Gln His Pro Val Gly Met Gln Phe Asn Pro Asp Thr	
165 170 175	
Val Arg Asn Glu Met Val Asp Phe Met Ala Val Ala Phe Ser Pro Val	
180 185 190	
Ala Val Asn Lys Phe Phe His Thr Val Leu Ser Ser Trp Val Leu Gly	
195 200 205	
Ala Val Phe Val Ile Gly Ile Ser Cys Trp Phe Leu Leu Lys Lys Arg	
210 215 220	
Asp Lys Glu Phe Ala Val Ala Ser Ile Lys Ile Gly Ala Val Phe Gly	
225 230 235 240	
Leu Val Ala Ser Leu Leu Thr Val Trp Thr Gly Asp Gly Ser Gly Tyr	
245 250 255	
Ala Ile Ala Gln Thr Gln Pro Met Lys Leu Ala Ala Val Glu Gly Tyr	
260 265 270	
Tyr Glu Gly Gln Asn Gly Ala Gly Leu Val Ala Val Gly Leu Leu Asn	
275 280 285	
Pro Glu Lys Lys Thr Tyr Asp Gly Gln Asp Pro Phe Leu Phe Arg	
290 295 300	
Ile Glu Ile Pro Lys Met Leu Ser Leu Leu Ala Glu Arg Lys Val Asp	
305 310 315 320	
Ala Phe Val Pro Gly Ile Lys Asn Ile Ile Glu Gly Gly Tyr Glu Leu	

$\frac{d^2 \psi}{dx^2} + k^2 \psi = 0$

<400> 6762

```
<210> 6763
<211> 446
<212> PRT
<213> B.fragilis
```

<400> 6763

Ile Tyr Arg Leu Gly Asn Ser Asp Leu Tyr His Gln Lys Glu Gln Glu  
1 5 10 15

Lys Lys Ile Met Phe Gly Leu Met Asp Cys Asn Asn Phe Tyr Ala Ser  
 20 25 30  
 Cys Glu Arg Val Phe Asn Pro Ala Leu Asn Gly Lys Pro Ile Val Val  
 35 40 45  
 Leu Ser Asn Asn Asp Gly Cys Val Ile Ala Arg Ser Asn Glu Ala Lys  
 50 55 60  
 Ala Leu Gly Ile Lys Met Gly Val Pro Ala Tyr Gln Ile Lys Asp Asp  
 65 70 75 80  
 Ile Gln Lys Tyr Gly Ile Ser Val Phe Ser Ser Asn Tyr Thr Leu Tyr  
 85 90 95  
 Gly Asp Met Ser Gly Arg Val Met Ser Ile Leu Ala Glu Gln Val Pro  
 100 105 110  
 Glu Met Glu Val Tyr Ser Ile Asp Glu Ala Phe Leu Asn Leu Glu Gly  
 115 120 125  
 Ile Arg Asp Ile Gln Ser Leu Gly Thr Asp Ile Ile Asn Lys Val Ile  
 130 135 140  
 Arg Gly Thr Gly Ile Pro Val Ser Leu Gly Ile Ala Pro Thr Lys Thr  
 145 150 155 160  
 Leu Ala Lys Val Ala Asn Lys Phe Ala Lys Lys Tyr Pro Ala Tyr Asn  
 165 170 175  
 Arg Leu Cys Ile Ile Asp Thr Glu Glu Lys Arg Thr Lys Ala Leu Gln  
 180 185 190  
 Leu Thr Glu Ile Gly Asp Ile Trp Gly Ile Gly His Arg Gln Val Ala  
 195 200 205  
 Lys Leu Glu Lys Gln Gly Val Lys Thr Ala Tyr Asp Phe Thr Glu Leu  
 210 215 220  
 Pro Glu Ser Trp Val Arg Lys Asn Met Thr Val Val Gly Glu Arg Thr  
 225 230 235 240  
 Trp Lys Glu Leu Gln Gly Ile Ser Cys Ile Asp Met Glu Thr Thr Pro  
 245 250 255  
 Pro Ala Lys Lys Gln Ile Cys Thr Ser Arg Ser Phe Gly Lys Met Val  
 260 265 270  
 Glu Asp Ile Asp Thr Met Ser Glu Ala Ile Ala Thr His Ala Ser Thr  
 275 280 285  
 Cys Ala Lys Lys Leu Arg Gln Gln Lys Gly Tyr Ala Met Ser Leu Met  
 290 295 300  
 Val Phe Ile His Thr Asn Asn Phe Arg Lys Asp Ser Pro Gln Tyr Trp  
 305 310 315 320  
 Arg Asn Thr Val Val His Leu Pro Ile Pro Thr Asn Asp Thr Leu Glu  
 325 330 335  
 Ile Val His Tyr Ala Leu Ala Gly Leu Lys Thr Ile Phe Met Gln Gly  
 340 345 350  
 Tyr Gln Tyr Lys Lys Ala Gly Val Ile Ile Thr Glu Ile Thr Asp Ser  
 355 360 365  
 Thr Gln Leu Gly Leu Phe Asp Ser Val Asp Arg Glu Lys Arg Glu Arg  
 370 375 380  
 Leu Gln Gln Thr Ile Asp Lys Ile Asn Gly Lys His Ser Arg Leu Val  
 385 390 395 400  
 Lys Leu Ala Ile Gln Gly Thr Gly Arg Asn Trp Lys Leu Lys Gln Lys  
 405 410 415  
 Gln Leu Ser Gly His Tyr Thr Thr Asp Ile Asn Gln Ile Ile Ser Ile  
 420 425 430  
 Asn Cys Thr Tyr Pro Thr Ala Cys Gln Arg Lys Gln Tyr Ser  
 435 440 445

&lt;210&gt; 6764

&lt;211&gt; 287

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6764

Lys Gln Leu His Met Tyr Lys Asn Ile Leu Ile Leu Gly Arg Gly Ile  
 1 5 10 15  
 Gly Gln Val Met Phe Gln Asn Asn Ala Leu Ser Gly Gly Leu Met Leu  
 20 25 30  
 Leu Gly Ile Ala Phe Asn Ser Trp Gln Leu Ala Val Leu Ser Val Leu  
 35 40 45  
 Gly Thr Val Val Ser Thr Leu Thr Ala Ser Leu Ser Gly Tyr Asp Lys  
 50 55 60  
 Glu Asp Ile Cys Asn Gly Leu Tyr Gly Phe Asn Gly Thr Leu Val Gly  
 65 70 75 80  
 Ile Ala Ile Gly Val Phe Met Glu Ile Asn Val Thr Ser Ile Leu Leu  
 85 90 95  
 Leu Ile Ser Gly Ser Ala Phe Ser Thr Trp Val Ala Arg Cys Phe Arg  
 100 105 110  
 Tyr Gln Asn Arg Val Ser Gly Leu Thr Ala Pro Phe Ile Phe Val Val  
 115 120 125  
 Trp Leu Leu Leu Val Gly Cys His Tyr Leu Tyr Pro Ser Leu Leu Leu  
 130 135 140  
 Ser Ser Ser Leu Glu Lys Pro Glu Leu Thr Met Asp Ile Phe Arg Ser  
 145 150 155 160  
 Phe Cys Leu Asn Ile Gly Gln Val Met Phe Gln Gly Asn Ile Leu Ser  
 165 170 175  
 Gly Leu Phe Phe Leu Leu Gly Ile Leu Ile Asn Ser Arg Met Asn Ala  
 180 185 190  
 Leu Tyr Thr Leu Thr Gly Ala Ile Leu Pro Leu Phe Met Ile Leu Tyr  
 195 200 205  
 Pro His Thr Asp Leu Ala Ala Trp Asn Leu Gly Leu Leu Gly Tyr Asn  
 210 215 220  
 Gly Val Leu Cys Ala Ile Ala Leu Gly Asp Lys Thr Gly Ile Gly Val  
 225 230 235 240  
 Val Lys Ala Ile Phe Ser Ile Ile Leu Ser Ile Val Leu Gln Leu Thr  
 245 250 255  
 Gly Met His Met Gly Ile Val Thr Leu Thr Ala Pro Phe Val Phe Ser  
 260 265 270  
 Val Trp Ile Thr Gly Gly Leu Phe Ser Val Phe Arg Ser Lys Ser  
 275 280 285

&lt;210&gt; 6765

&lt;211&gt; 359

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6765

Leu Asn Arg His Thr Met Lys Arg Val Phe Val Phe Gln Asp Phe Lys  
 1 5 10 15  
 Ser Gln Lys Phe Trp Ser Ile Asp Val Arg Gly Thr Asp Val Ile Val  
 20 25 30  
 Asn Tyr Gly Lys Leu Gly Thr Asp Gly Gln Thr Gln Val Lys Asn Phe  
 35 40 45  
 Ser Ser Ala Gly Glu Ala Glu Lys Ala Ala Gly Lys Leu Ile Ala Glu  
 50 55 60  
 Lys Thr Lys Lys Gly Tyr Val Glu Thr Leu Glu Val Ala Lys Glu  
 65 70 75 80  
 Met Lys Val Glu Ala Lys Lys Tyr Ala Leu Ser Tyr Asp Glu Ala Glu  
 85 90 95  
 Glu Gly Val Asn Leu Met Asp Lys Ile Leu Lys Asp Lys Lys Leu Pro  
 100 105 110

Ser Leu Lys Gln Ile Thr Ile Gly Cys Trp Gly Tyr Glu Gly Glu Asp  
 115 120 125  
 Cys Ser Asp Ile Ala Asp Gly Ile Val Glu Asn Lys Glu Lys Phe Ala  
 130 135 140  
 His Phe Glu Gly Leu Phe Trp Gly Asp Ile Asp Phe Glu Glu Gln Glu  
 145 150 155 160  
 Ile Ser Trp Ile Glu Gln Val Asp Leu Ser Pro Val Leu Asp Ala Met  
 165 170 175  
 Pro Leu Leu Asn Asn Leu Lys Ile Lys Gly Thr Asn Asn Leu Ser Ile  
 180 185 190  
 Gly Lys Lys Pro Arg Pro Asn Leu Lys Ser Leu Glu Ile Ile Ser Gly  
 195 200 205  
 Gly Leu Pro Asp Ser Val Val Glu Asp Ile Leu Gly Ser Asp Leu Pro  
 210 215 220  
 Asn Leu Glu Lys Leu Val Leu Tyr Val Gly Val Glu Asp Tyr Gly Phe  
 225 230 235 240  
 Asp Gly Asp Met Asn Val Phe Arg Pro Leu Phe Ser Lys Asp Arg Phe  
 245 250 255  
 Pro Asn Leu Lys Trp Leu Gly Ile Val Asp Ala Glu Glu Gln Asn Ala  
 260 265 270  
 Val Val Glu Met Phe Leu Glu Ser Asp Ile Leu Pro Gln Leu Glu Thr  
 275 280 285  
 Met Asp Ile Ser Ala Gly Val Leu Thr Asp Glu Gly Ala Arg Leu Leu  
 290 295 300  
 Leu Asp His Val Asp Lys Ile Lys His Leu Lys Phe Ile Asn Met Lys  
 305 310 315 320  
 Tyr Asn Tyr Leu Ser Asp Glu Met Lys Lys Glu Leu Gln Lys Ser Leu  
 325 330 335  
 Pro Met Lys Ile Asp Val Ser Asp Ser Gln Glu Tyr Asp Asp Asp Tyr  
 340 345 350  
 Ser Tyr Pro Met Ile Thr Glu  
 355

<210> 6766  
 <211> 258  
 <212> PRT  
 <213> B.fragilis

<400> 6766  
 Pro Ser Gly Gln Gln Glu Glu Arg Lys Ile Ser Met Asn Lys Thr Val  
 1 5 10 15  
 Ile Glu Leu Gln Asn Ile Lys Arg Asn Phe Gln Val Gly Asp Glu Thr  
 20 25 30  
 Val His Ala Leu Arg Gly Val Ser Phe Thr Ile Thr Glu Gly Glu Phe  
 35 40 45  
 Val Thr Ile Met Gly Thr Ser Gly Ser Gly Lys Ser Thr Leu Leu Asn  
 50 55 60  
 Thr Leu Gly Cys Leu Asp Thr Pro Thr Ser Gly Glu Tyr Leu Leu Asp  
 65 70 75 80  
 Gly Ile Ser Val Arg Thr Met Ser Lys Pro Gln Arg Ala Ile Leu Arg  
 85 90 95  
 Asn Arg Lys Ile Gly Phe Val Phe Gln Ser Tyr Asn Leu Leu Pro Lys  
 100 105 110  
 Thr Thr Ala Val Glu Asn Val Glu Leu Pro Leu Met Tyr Asn Ser Gly  
 115 120 125  
 Val Ser Ala Ser Glu Arg Arg Arg Arg Ala Ile Glu Ala Leu Gln Ala  
 130 135 140  
 Val Gly Leu Gly Glu Arg Leu Glu His Lys Ser Asn Gln Met Ser Gly  
 145 150 155 160

Gly Gln Met Gln Arg Val Ala Ile Ala Arg Ala Leu Val Asn Asn Pro  
                           165                          170                          175  
 Ala Val Ile Leu Ala Asp Glu Ala Thr Gly Asn Leu Asp Thr Arg Thr  
                           180                          185                          190  
 Ser Phe Glu Ile Leu Val Leu Phe Gln Lys Leu His Ala Glu Gly Arg  
                           195                          200                          205  
 Thr Ile Ile Phe Val Thr His Asn Pro Glu Ile Ala Gln Tyr Ser Ser  
                           210                          215                          220  
 Arg Asn Ile Val Leu Arg Asp Gly Gln Val Lys Glu Asp Ser Thr Asn  
 225                          230                          235                          240  
 Pro Asp Ile Leu Ser Ala Ala Glu Ala Leu Ala Ala Leu Pro Val Gln  
                           245                          250                          255  
 Glu Glu

<210> 6767

<211> 105

<212> PRT

<213> B.fragilis

<400> 6767

Ser Asn Tyr Lys Glu Ile Met Ala Asn Leu Phe Ile Thr Ile Val Ser  
 1                          5                          10                          15  
 Thr Lys Lys Met Leu Asn Gly Lys His Lys Val Arg Ile Ala Val Ser  
                           20                          25                          30  
 His Asn Leu Ala Thr Arg Tyr Ile Pro Thr Asn Ile Ile Ile Asp Ala  
                           35                          40                          45  
 Glu Asn Glu Phe Lys Asn Gly Lys Val Val Lys Arg Pro Asp Lys Asp  
                           50                          55                          60  
 Ile Leu Asn Ala Arg Leu Lys Lys Ile Tyr Asp Met Tyr Tyr Glu Arg  
 65                          70                          75                          80  
 Cys Met Lys Ile Glu Tyr Ala Asn Thr Leu Thr Cys Thr Gln Leu Ile  
                           85                          90                          95  
 Lys Tyr Cys Ile Phe Ala Glu Ser Arg  
                           100                          105

<210> 6768

<211> 505

<212> PRT

<213> B.fragilis

<400> 6768

Cys Ile Ser Lys Lys Arg Asn Met Ser Lys Phe Val Met Thr Ile Phe  
 1                          5                          10                          15  
 Gly Ala Ser Gly Asp Leu Thr Lys Arg Lys Leu Met Pro Ala Leu Tyr  
                           20                          25                          30  
 Ser Leu Tyr Val Ala Lys Arg Leu Pro Glu Glu Phe Glu Ile Leu Gly  
                           35                          40                          45  
 Val Gly Arg Thr Val Tyr Glu Asp Ala Asp Tyr Arg Thr Tyr Ile Tyr  
                           50                          55                          60  
 Asn Glu Met Glu Lys Phe Val Lys Ser Glu Glu Gln Asn Lys Glu Lys  
 65                          70                          75                          80  
 Met Asp Ala Phe Val Gly His Leu His Tyr Leu Ala Ile Asp Pro Ala  
                           85                          90                          95  
 Leu Glu Ser Gly Tyr Gly Gln Leu Arg Leu Arg Ile Glu Glu Leu Ser  
                           100                          105                          110  
 Gly Asp Ser Arg Pro Asp Asp Leu Leu Phe Tyr Leu Ala Thr Pro Pro  
                           115                          120                          125  
 Ser Leu Tyr Gly Val Ile Pro Leu His Leu Lys Ser Val His Leu Asn

130		135		140
Lys Gly Arg Ala Arg Ile Ile Val Glu Lys Pro Phe Gly Tyr Asp Leu				
145		150		155
Glu Ser Ala Glu Lys Leu Asn Lys Ile Tyr Ala Ser Val Phe Asp Glu				
	165		170	175
His Gln Ile Tyr Arg Ile Asp His Phe Leu Gly Lys Glu Thr Ala Gln				
	180		185	190
Asn Leu Leu Ala Phe Arg Phe Ala Asn Gly Ile Phe Glu Pro Leu Trp				
	195		200	205
Asn Arg Asn Tyr Ile Asp Tyr Val Glu Val Thr Ala Val Glu Asn Leu				
	210		215	220
Gly Ile Glu Gln Arg Gly Gly Phe Tyr Asp Thr Thr Gly Ala Leu Arg				
225		230		235
Asp Met Val Gln Asn His Leu Ile Gln Leu Val Ala Leu Thr Ala Met				
	245		250	255
Glu Pro Pro Ala Val Phe Asn Ala Asp Asn Phe Arg Asn Glu Val Val				
	260		265	270
Lys Val Tyr Glu Ser Leu Thr Pro Leu Thr Glu Thr Asp Leu Ser Glu				
	275		280	285
His Ile Val Arg Gly Gln Tyr Thr Ala Gly Gly Asn Lys Arg Gly Tyr				
290		295		300
Arg Glu Glu Lys Asn Ile Ser Pro Asp Ser Arg Thr Glu Thr Tyr Ile				
305		310		315
Ala Met Lys Leu Gly Ile Ser Asn Trp Arg Trp Ser Gly Val Pro Phe				
	325		330	335
Tyr Ile Arg Thr Gly Lys Gln Met Pro Thr Lys Val Thr Glu Ile Val				
	340		345	350
Val His Phe Arg Glu Thr Pro His Gln Met Phe His Cys Ala Gly Gly				
	355		360	365
Asn Cys Pro Arg Ala Asn Lys Leu Ile Leu Arg Leu Gln Pro Asn Glu				
	370		375	380
Gly Ile Val Leu Lys Phe Gly Met Lys Val Pro Gly Pro Gly Phe Glu				
385		390		395
Val Lys Gln Val Thr Met Asp Phe Ser Tyr Asp Gln Leu Gly Gly Val				
	405		410	415
Pro Gly Gly Asp Ala Tyr Ala Arg Leu Ile Glu Asp Cys Ile Leu Gly				
	420		425	430
Asp Gln Thr Leu Phe Thr Arg Ser Asp Ala Val Glu Ala Ser Trp His				
	435		440	445
Phe Phe Asp Pro Ile Leu Arg Tyr Trp Asn Glu His Pro Glu Ala Pro				
	450		455	460
Leu Tyr Gly Tyr Pro Ala Gly Thr Trp Gly Pro Leu Glu Ser Glu Ala				
465		470		475
Met Met His Glu His Gly Ala Glu Trp Thr Asn Pro Cys Lys Asn Leu				
	485		490	495
Thr Asn Thr Asp Gln Tyr Cys Glu Leu				
	500		505	

&lt;210&gt; 6769

&lt;211&gt; 79

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6769

Leu Glu Leu Asn Val Ser Arg Leu Leu Pro Ala Phe Tyr Lys Phe Ala			
1	5	10	15
Arg Asn Val Phe Ser Leu Val Leu Ile Gly Gly Leu Ala Ala Gln Lys			
	20	25	30
Val Gly Glu Glu Lys Gln Ala Glu Asn Glu Glu His Asp Lys Glu Phe			



	35		40		45	
His	Lys	Tyr	Asn	Glu	Pro	Gln
	50					55
Ser	Leu	Leu	His	Arg	Asn	Ser
65					70	

&lt;210&gt; 6770

&lt;211&gt; 690

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6770

Ser	Ile	Met	Lys	Gln	Ile	Gln	Pro	Val	Phe	Leu	Ala	Met	Lys	Phe	Ser
1				5					10					15	
Phe	Leu	Ile	Phe	Phe	Phe	Phe	Ser	Leu	Pro	Val	Gly	Ala	Gln	Ser	Ile
			20				25						30		
Phe	Gln	Lys	Tyr	Gly	Arg	Phe	Leu	Thr	Glu	Pro	Arg	Ser	Tyr	Val	Cys
		35					40					45			
Tyr	Arg	Thr	Asp	Gly	Lys	Leu	Lys	Ile	Asp	Gly	Lys	Leu	Asp	Glu	Val
	50					55					60				
Ser	Trp	Gln	Lys	Ala	Lys	Pro	Thr	Ala	Pro	Phe	Val	Asp	Ile	Ser	Gly
65					70					75					80
Glu	Gly	Phe	Pro	Thr	Pro	Lys	Tyr	Glu	Thr	Thr	Ala	Lys	Met	Leu	Trp
				85					90					95	
Asp	Asp	Glu	Tyr	Leu	Tyr	Ile	Gly	Ala	Met	Leu	Gln	Glu	Asp	Asp	Ile
			100					105					110		
Lys	Ala	Arg	Leu	Thr	Gln	Arg	Asp	Thr	Ile	Ile	Tyr	Tyr	Asp	Asn	Asp
		115					120						125		
Phe	Glu	Val	Phe	Ile	Asp	Pro	Asp	Trp	Asp	Gly	His	Asn	Tyr	Phe	Glu
	130					135					140				
Ile	Glu	Thr	Asn	Ala	Arg	Gly	Val	Ile	Phe	Asp	Leu	Met	Leu	Asp	Arg
145					150					155					160
Pro	Tyr	Arg	Ser	Ser	Gly	Asn	Phe	Met	Val	Gln	Trp	Asp	Cys	Pro	Gly
			165						170					175	
Leu	Lys	Leu	Ala	Ile	His	Arg	Glu	Gly	Thr	Leu	Asn	Lys	Ser	Lys	Asp
		180						185					190		
Lys	Asp	Lys	Tyr	Trp	Ser	Val	Glu	Met	Ala	Ile	Pro	His	Lys	Ala	Leu
	195						200					205			
Thr	Met	Asn	Phe	Asn	Asn	Pro	Leu	Lys	Ala	Gly	Asn	Cys	Trp	Arg	Ile
	210					215						220			
Asn	Phe	Ser	Arg	Val	Gln	Trp	Leu	Lys	Ala	Gly	Gly	Pro	Glu	Glu	Asn
225					230					235					240
Trp	Val	Trp	Thr	Pro	Thr	Gly	Lys	Val	Asp	Met	His	Met	Pro	Asp	Arg
			245						250					255	
Trp	Gly	Tyr	Leu	Phe	Phe	Ala	Ala	Glu	Lys	Val	Gly	Thr	Pro	Glu	His
		260						265					270		
Thr	Phe	Ala	Leu	Pro	Tyr	Asn	Ala	Ser	Val	Tyr	Lys	Leu	Leu	Trp	Ala
	275					280						285			
Met	Phe	Tyr	Val	Gln	Gln	Glu	Arg	Tyr	Ala	Lys	Glu	Lys	Asn	Tyr	Leu
	290					295					300				
Arg	Thr	Glu	Gln	Asp	Phe	Phe	Leu	Thr	Asp	Ala	Glu	Leu	Lys	Gly	Leu
305					310					315					320
Pro	Gln	Gly	Ala	Gln	Ile	Ser	Val	Glu	Ala	Thr	Trp	Asn	Thr	Tyr	Gln
			325						330					335	
Ile	Ala	Ile	Thr	Val	Pro	Gly	Glu	Gly	Arg	Arg	Tyr	Ile	Ile	Asn	Asn
		340						345					350		
Glu	Gly	Arg	Phe	Trp	Thr	Glu	Lys	Val	Ala	Pro	Arg	Gln	Val	Lys	Asn
	355					360						365			
Trp	Val	Trp	Thr	Arg	Ile	Asn	Lys	Ser	Lys	Ser	Glu	Thr	Asp	Tyr	Arg

370 375 380  
 Gln Trp Phe Ala Leu Leu Lys Glu Cys Gly Ile Ser Gly Val Met Phe  
 385 390 395 400  
 Glu Gly Tyr Asp Glu Asn Leu Tyr Arg Met Cys Lys Glu Ala Gly Leu  
 405 410 415  
 Glu Ala His Phe Trp Lys Trp Thr Met Asn Arg Ala Glu Leu Leu Asn  
 420 425 430  
 Val His Pro Asp Trp Phe Ala Val Asn Arg Lys Gly Glu Ser Thr His  
 435 440 445  
 Asp Lys Pro Ala Tyr Val Asp Tyr Tyr Arg Phe Leu Cys Pro Asn His  
 450 455 460  
 Glu Gly Val Ala Gln Tyr Leu Ala Asp Asp Tyr Val Lys Ile Ala His  
 465 470 475 480  
 Leu Pro Tyr Val Asp Gly Val His Leu Asp Tyr Val Arg Phe Pro Asp  
 485 490 495  
 Val Val Leu Pro Val Ser Leu Trp Lys Asn Tyr Gly Ile Glu Gln Thr  
 500 505 510  
 Ser Glu His Pro Glu Tyr Asp Tyr Cys Tyr Cys Asp Val Cys Arg Thr  
 515 520 525  
 Lys Phe Lys Glu Gln Thr Gly Arg Asp Pro Leu Glu Leu Lys Tyr Pro  
 530 535 540  
 Met Glu Asp Gln Ser Trp Ile Asn Phe Arg Leu Asp Ala Ile Ser Arg  
 545 550 555 560  
 Val Val Asp Gln Ile Thr Lys Ala Val Lys Ala Asp Gly Lys Ala Ile  
 565 570 575  
 Ser Ala Ala Val Phe Pro Gly Pro Ser Met Ala Lys Lys Met Val Arg  
 580 585 590  
 Gln Asp Trp Gly Asn Trp Ser Leu Asp Ala Tyr Phe Pro Met Ile Tyr  
 595 600 605  
 Asn Gly Phe Tyr Tyr Glu Gly Pro Glu Trp Ile Gly Arg Ser Val Gln  
 610 615 620  
 Glu Ser Val Lys Thr Val Asp Gly Arg Ala Lys Val Tyr Ala Gly Leu  
 625 630 635 640  
 Met Phe Pro Asp Ile Lys Asn Asp Phe Glu Lys Ala Leu Asp Glu Ala  
 645 650 655  
 Phe Asp Asn Gly Ala Ser Gly Val Ser Phe Phe Asp Gly Pro Ser Asp  
 660 665 670  
 Glu Tyr Leu His Arg Phe Lys Ala Tyr Leu Asp Lys Lys Gly Leu Lys  
 675 680 685  
 Thr Glu  
 690

&lt;210&gt; 6771

&lt;211&gt; 297

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (260)

&lt;223&gt; Identity of amino acid sequences at the above locations are unknown.

&lt;400&gt; 6771

Asp His Ala Asp Arg Pro Gly Phe Asp Tyr Ser Glu Trp Glu Lys Ile  
 1 5 10 15  
 Gly Leu Ala His Ser Phe Ser Thr Pro Tyr Phe Met Ser Lys Asp Phe  
 20 25 30  
 Tyr Val Gly Tyr Gly Trp Tyr Arg Lys Ala Phe Pro Val Lys Lys Glu  
 35 40 45

Ile Leu Gly Lys Lys Ser Phe Leu Glu Phe Asp Gly Val Phe Gln Glu  
 50 55 60  
 Ala Glu Ile Phe Val Asn Gly His Leu Ala Gly Thr His Lys Gly Gly  
 65 70 75 80  
 Tyr Thr Gly Phe Ser Ile Asp Ile Ser Ala Tyr Leu Lys Glu Gly Lys  
 85 90 95  
 Asn Leu Val Ala Val Arg Val Asn Asn Cys Trp Arg Pro Asp Leu Ala  
 100 105 110  
 Pro Arg Ala Gly Glu His Val Phe Ser Gly Gly Ile Tyr Arg Asn Val  
 115 120 125  
 Arg Leu Val Ile Lys Pro Pro Thr Tyr Ile Asp Trp Tyr Gly Thr Trp  
 130 135 140  
 Val Thr Thr Pro Asp Leu Ala Glu Asn Lys Gly Lys Ser Gly Ser Val  
 145 150 155 160  
 His Ile Arg Thr Asp Val Cys Asn Ala Ser Gly Lys Thr Asp Thr Tyr  
 165 170 175  
 Arg Leu Leu Thr Thr Val Val Asp Ala Gln Gly Lys Glu Val Ser Ser  
 180 185 190  
 Val Ser Thr Ser Gln Val Leu Pro Asp Asn Ala Thr Tyr Thr Phe Lys  
 195 200 205  
 Gln Gln Thr Lys Glu Ile Gln Ala Pro Gln Leu Trp His Pro Asn His  
 210 215 220  
 Pro Ala Leu Tyr Lys Val Ile Ser Ser Leu Tyr His Gly Gln Glu Leu  
 225 230 235 240  
 Ile Asp Arg Tyr Glu Thr Thr Phe Gly Phe Arg Trp Phe Glu Trp Thr  
 245 250 255  
 Ala Asp Arg Xaa Phe Phe Leu Asn Gly Glu His Leu Tyr Phe Lys Gly  
 260 265 270  
 Ala Asn Val His Leu Asp His Ala Gly Trp Gly Asp Ala Val Thr Gln  
 275 280 285  
 Asn Arg Asn Ala Lys Lys Asn Leu Arg  
 290 295

<210> 6772

<211> 341

<212> PRT

<213> B.fragilis

<400> 6772

Leu Arg Ser Glu Arg Met Arg Ile Leu Val Ala Ser Asn Ser Thr Ser  
 1 5 10 15  
 Lys Arg Thr Asp Tyr Phe Ile Lys Ala Gly Arg Ser Leu Gly Ala Asp  
 20 25 30  
 Thr Cys Phe Val Thr Tyr Asp Glu Leu Ser Ala Val Leu Pro Asp Cys  
 35 40 45  
 Arg Asp Thr Val Val Lys Leu Glu Pro Pro Val Phe Arg Glu Ala Asp  
 50 55 60  
 Phe Arg Lys Tyr Asn Leu Leu Cys Glu Glu Tyr Arg Ser Leu Leu Ser  
 65 70 75 80  
 Arg Leu Ala Asp Met Asp Lys Ser Glu Ser Val His Phe Leu Asn Glu  
 85 90 95  
 Pro Ala Ala Ile Leu Cys Ala Leu Asp Lys Val Tyr Thr Gln Arg Lys  
 100 105 110  
 Leu Thr Gly Ala Gly Leu Lys Thr Pro Leu Leu Ser Asp Ala Leu  
 115 120 125  
 Ser Thr Phe Asp Asp Leu Ala Ala Ile Leu Cys Arg Gln Lys Arg Gly  
 130 135 140  
 Gly Phe Leu Lys Pro Arg Tyr Gly Ser Gly Ala Gly Gly Ile Met Ala  
 145 150 155 160

Val Arg Tyr Asn His Arg Arg Asp Glu Trp Val Ala Tyr Thr Thr Met  
 165 170 175  
 Ser Trp Glu Gly Gly Arg Val Cys Asn Ala Lys Arg Ile Cys Arg Leu  
 180 185 190  
 Thr Asn Arg Lys Glu Ile Ala Thr Leu Ala Glu Glu Val Ile Arg Cys  
 195 200 205  
 Gly Ala Val Leu Glu Glu Trp Met Ala Lys Glu Lys Leu Glu Gly Glu  
 210 215 220  
 Asn Tyr Asp Leu Arg Val Val Cys Arg Gly Asp Glu Val Asp Tyr Val  
 225 230 235 240  
 Val Val Arg Cys Ser Asp Asp Ala Ile Thr Asn Leu His Leu Asn Asn  
 245 250 255  
 Lys Ala Arg Leu Phe Glu Glu Leu Ser Leu Ala Pro Ser Val Arg Glu  
 260 265 270  
 Glu Leu Phe Cys Arg Ser Ile Thr Ala Met Lys Ala Leu Gly Leu Arg  
 275 280 285  
 Tyr Ala Gly Ile Asp Val Leu Ile Ala Arg Asn Thr Asp Thr Pro Tyr  
 290 295 300  
 Ile Ile Glu Val Asn Gly Gln Gly Asp His Ile Tyr Gln Asp Met Tyr  
 305 310 315 320  
 Thr Glu Asn Lys Ile Tyr Ala Asn Gln Ile Lys Thr Ile Glu Ser Leu  
 325 330 335  
 Phe Asn Gly Asn Arg  
 340

&lt;210&gt; 6773

&lt;211&gt; 411

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6773

Arg Tyr Asn Asp Met Lys Lys Lys Lys Ile Ile Leu Ile Ala Val Ser  
 1 5 10 15  
 Leu Ala Ile Leu Ala Gly Gly Gly Val Trp Leu Phe Gly Gly Ser Thr  
 20 25 30  
 Ala Lys His Lys Val Thr Tyr Ala Thr Val Ser Lys Gly Glu  
 35 40 45  
 Ile Ser Glu Ser Val Thr Ala Thr Gly Thr Ile Glu Pro Val Thr Glu  
 50 55 60  
 Val Glu Val Gly Thr Gln Val Ser Gly Ile Ile Asp Lys Ile Tyr Val  
 65 70 75 80  
 Asp Tyr Asn Ala Ala Val Thr Lys Gly Gln Leu Ile Ala Glu Met Asp  
 85 90 95  
 Arg Val Thr Leu Gln Ser Glu Leu Ala Ser Gln Arg Ala Thr Tyr Ser  
 100 105 110  
 Gly Ala Lys Ala Glu Tyr Glu Tyr Gln Lys Lys Asn Tyr Glu Arg Asn  
 115 120 125  
 Lys Gly Leu His Glu Lys Gly Leu Ile Ser Asp Thr Asp Tyr Glu Gln  
 130 135 140  
 Ser Leu Tyr Asn Tyr Glu Lys Ala Lys Ser Ser Phe Glu Ser Ser Gln  
 145 150 155 160  
 Ala Ser Leu Ala Lys Ala Glu Arg Asn Leu Ser Tyr Ala Thr Ile Thr  
 165 170 175  
 Ser Pro Ile Asp Gly Val Val Ile Ser Arg Asp Val Glu Glu Gly Gln  
 180 185 190  
 Thr Val Ala Ser Gly Phe Glu Thr Pro Thr Leu Phe Thr Ile Ala Ala  
 195 200 205  
 Asp Leu Thr Gln Met Gln Val Val Ala Asp Val Asp Glu Ala Asp Ile  
 210 215 220

Gly Gly Val Glu Glu Gly Gln Arg Ala Thr Phe Thr Val Asp Ala Tyr  
 225 230 235 240  
 Pro Asn Asp Val Phe Glu Gly Ile Val Thr Gln Ile Arg Leu Gly Asp  
 245 250 255  
 Ala Ser Ser Thr Ser Thr Ser Ser Ser Thr Thr Val Val Thr Tyr  
 260 265 270  
 Glu Val Val Ile Ser Ala His Asn Pro Asp Leu Lys Leu Lys Pro Arg  
 275 280 285  
 Leu Thr Ala Asn Val Thr Ile Tyr Thr Leu Asp Arg Lys Asp Val Leu  
 290 295 300  
 Ser Val Pro Ala Arg Ala Leu Arg Phe Thr Pro Glu Lys Pro Leu Ile  
 305 310 315 320  
 Gly Asp Asn Asp Ile Val Lys Asp Cys Glu Gly Glu His Lys Ile Trp  
 325 330 335  
 Thr Arg Glu Gly Asn Thr Phe Thr Ala His Pro Val Gln Ile Gly Ile  
 340 345 350  
 Thr Asn Gly Ile Asn Thr Glu Ile Thr Gln Gly Ala Ser Glu Gly Met  
 355 360 365  
 Val Val Val Thr Glu Ala Thr Ile Gly Asn Met Pro Gly Gly Asn Val  
 370 375 380  
 Ser Pro Glu Gly Gly Gln Glu Gly Gly Gly Glu Gln Ser Pro Phe Met  
 385 390 395 400  
 Pro Ser His Pro Gly Ser Lys Lys Lys Gly Lys  
 405 410

<210> 6774  
 <211> 206  
 <212> PRT  
 <213> B.fragilis

<400> 6774  
 Asn Pro Ala Arg Arg Glu Ala Glu Lys Ser Arg Thr Glu Ala Glu Leu  
 1 5 10 15  
 Lys Asn Leu Arg Asn Gln Leu Asn Pro His Phe Leu Leu Asn Thr Leu  
 20 25 30  
 Asn Asn Ile Tyr Ala Leu Ile Ala Phe Asp Ser Asp Lys Ala Gln Gln  
 35 40 45  
 Ala Val Gln Glu Leu Ser Lys Leu Leu Arg Tyr Val Leu Tyr Asp Asn  
 50 55 60  
 Gln Gln Asn Tyr Val Pro Leu Cys Lys Glu Val Asp Phe Ile Arg Asn  
 65 70 75 80  
 Tyr Ile Glu Leu Met Arg Ile Arg Leu Ser Gly Asn Val Glu Val Ile  
 85 90 95  
 Thr Gln Phe Asp Ile Gln Pro Asp Ser Arg Thr Glu Ile Ala Pro Leu  
 100 105 110  
 Ile Phe Ile Ser Leu Ile Glu Asn Ala Phe Lys His Gly Ile Ser Pro  
 115 120 125  
 Thr Glu Leu Ser Phe Ile His Ile Leu Ile Ser Glu Asn Lys Glu Glu  
 130 135 140  
 Ile Arg Cys Glu Ile Arg Asn Ser Tyr His Pro Lys Thr Asn Thr Asp  
 145 150 155 160  
 Lys Ser Gly Ser Gly Ile Gly Leu Glu Gln Val Arg Lys Arg Leu Glu  
 165 170 175  
 Leu Ser Tyr Pro Gly Arg Tyr Gln Trp Asp Lys Ala Ile Ser Pro Asp  
 180 185 190  
 Gly Lys Glu Tyr Ile Ser Lys Leu Leu Ile Phe Asn His Pro  
 195 200 205

<210> 6775

<211> 259  
 <212> PRT  
 <213> B.fragilis

<400> 6775

Ala	Trp	Cys	Arg	Met	Asp	Gln	Ser	Met	Gln	Glu	Leu	Asn	Lys	His	Arg
1				5					10					15	
Ser	Ile	Leu	Arg	Ala	Met	Lys	Pro	Tyr	Ile	Phe	Pro	Ser	Ser	Ile	Glu
			20					25					30		
Thr	Ala	Arg	Ala	Leu	Ile	Leu	His	Leu	Val	Lys	Leu	Met	Leu	Asp	Glu
			35				40					45			
Pro	Asp	Arg	Thr	Phe	Cys	Ile	Ala	Phe	Ser	Gly	Gly	Ser	Thr	Pro	Ala
	50					55					60				
Leu	Met	Phe	Asp	Leu	Trp	Ala	Asn	Glu	Tyr	Thr	Asp	Ile	Thr	Pro	Trp
65					70					75					80
Glu	Arg	Leu	Lys	Val	Phe	Trp	Val	Asp	Glu	Arg	Cys	Val	Pro	Pro	Glu
				85					90					95	
Asn	Ser	Asp	Ser	Asn	Tyr	Gly	Met	Met	Arg	Ser	Leu	Leu	Leu	Ser	Ile
			100					105					110		
Val	Pro	Ile	Pro	Tyr	Glu	Asn	Val	Phe	Arg	Ile	Gln	Gly	Glu	Lys	Asn
		115				120						125			
Pro	Lys	Lys	Glu	Ala	Ala	Arg	Tyr	Ser	Lys	Leu	Val	Met	Lys	Glu	Val
		130				135					140				
Pro	Val	Glu	Asn	Glu	Phe	Pro	Leu	Phe	Asp	Val	Val	Leu	Leu	Gly	Ala
145					150					155					160
Gly	Asn	Asp	Gly	His	Thr	Ser	Ser	Ile	Phe	Pro	Gly	Gln	Glu	Glu	Leu
				165					170					175	
Leu	Ser	Thr	Asp	His	Ile	Tyr	Glu	Ala	Asn	Phe	Asn	Pro	Asn	Asn	Gly
			180					185					190		
Gln	Lys	Arg	Ile	Ala	Leu	Thr	Gly	Leu	Pro	Ile	Leu	Asn	Ala	Arg	Arg
		195					200					205			
Ile	Ile	Phe	Leu	Ile	Thr	Gly	Arg	Val	Lys	Ser	Pro	Val	Val	Glu	Asp
		210				215						220			
Ile	Phe	Tyr	Ser	Gly	Asp	Thr	Gly	Pro	Ala	Ala	Tyr	Ile	Ala	His	His
225					230					235					240
Ala	Asp	Asn	Val	Glu	Leu	Phe	Met	Asp	Asn	Ala	Ala	Ala	Glu	Lys	Val
				245					250					255	
Ile	Arg	Gly													

<210> 6776  
 <211> 426  
 <212> PRT  
 <213> B.fragilis

<400> 6776

Tyr	Gln	Ala	Leu	Val	Leu	Arg	Phe	Val	Val	Leu	Ile	Asn	Asn	Leu	Phe
1				5					10					15	
Tyr	Met	Arg	Ile	Lys	Arg	Leu	Leu	Tyr	Ala	Ile	Ala	Thr	Ile	Leu	Pro
			20					25					30		
Phe	Leu	Phe	Leu	Cys	Ser	Cys	Tyr	Glu	Glu	Gln	Glu	Pro	Gln	Gln	Glu
		35					40					45			
Lys	Gln	Asp	Lys	Glu	Lys	Trp	Thr	Met	Gln	Val	Ala	Gly	Asn	Gln	Leu
	50					55					60				
Asn	Glu	Phe	Leu	Asn	Ile	Asn	Pro	Asp	Leu	Arg	Asn	Leu	Tyr	Ala	Tyr
65					70					75					80
Pro	Asp	Trp	Asp	Ala	Ala	Gln	Ile	Ile	Arg	Glu	Arg	Ser	Asp	Thr	Val
				85					90					95	
Ser	Tyr	Tyr	Val	Pro	Val	Val	Asp	Ile	Thr	Ala	Asp	Thr	Cys	Ser	Tyr

100	105	110
Leu Ile Ile Ala Arg Ala Ser Asn Asp Val Tyr Leu Tyr Met Val Arg		
115	120	125
Leu Pro Glu Glu Tyr Ser Gly Phe Asp Ser Phe Leu Glu Glu His Leu		
130	135	140
Lys Ile Leu Arg Ile Ile Asp Gly Ala Arg Arg Val Pro Val Gly Tyr		
145	150	155
Leu His Asn Phe Pro Asp Asp Val Leu Thr Arg Thr Arg Ser Ser Gly		
165	170	175
Ser Leu Phe Asn His Asp Arg Glu Thr Asn Thr Glu Ile Leu Glu Asn		
180	185	190
Asn Thr Phe Val Lys Asp Asp Leu Phe Gly Ala Gly Phe Ser Leu Pro		
195	200	205
Glu Val Thr Val Ile Gly Arg Arg Pro Thr Ser Ser Glu Asp Pro Phe		
210	215	220
Lys Trp Pro Phe Gly Asp Met Pro Ser Glu Ser Pro Lys Ala Leu Pro		
225	230	235
Gly Leu Asp Asp Phe Phe Ser Pro Gln Gly Gly Gly Ser Ser Ser Leu		
245	250	255
Ser Ser Pro Gln Gln Ser Gly Ser Leu Pro Lys Pro Glu Glu Val Ile		
260	265	270
Lys Asp Ala Thr Val Lys Lys Ala Leu Glu Glu Ala Trp Ser Asp Met		
275	280	285
Leu Lys Arg Ser Thr Lys Asp Gln Arg Gln Glu Val Gly Phe Trp Ile		
290	295	300
Tyr Tyr Asp Pro Val Lys Lys Gln Tyr Tyr Ile Gly Lys Lys Arg Tyr		
305	310	315
Gly Ile Ala Val Lys Asn Asp Gly Lys Ala Arg Gly Asn Ile Ser Leu		
325	330	335
Gly Asp Lys Ser Pro Ser Val Asn Gly Val Pro Ala Thr Ala Lys Val		
340	345	350
Val Ala Ser Phe His Thr His Thr Pro Met Thr Glu Ile Lys Gly Met		
355	360	365
Lys Arg Lys Val Gly Pro Ser Lys Glu Asp Lys Gly Asn Ala Asp Lys		
370	375	380
Asn Arg Ile Pro Ile Ile Val Tyr Asp Tyr Ile Gly Thr Lys Asp Pro		
385	390	395
Arg Thr Asn Asp Tyr Tyr Val Ile Gly Gly His Lys Val Ser Asp Pro		
405	410	415
Lys Lys Met Tyr Ile Tyr Gln Pro Lys Lys		
420	425	

&lt;210&gt; 6777

&lt;211&gt; 419

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6777

Lys Gln Leu Ser Met Lys Met Ile Leu Asn Phe Ser Glu Cys Ile Ile		
1	5	10
Ser Phe Phe Ser Leu Cys Leu Leu Cys Val Val Phe Ser Cys Asp Glu		
20	25	30
Met Asp Ile Asp Gln Gly Pro Pro Thr Ser Val Thr Arg Asn Leu Met		
35	40	45
Thr Ser Asp Gly Pro Gly Phe Lys Ile Asp Thr Val Thr Tyr Asp Lys		
50	55	60
Ile Pro Ala Glu Tyr Ala Arg Lys Ile Leu Ser Leu Glu Glu Pro Thr		
65	70	75
Ser Val Val Thr Asp Lys Ser Lys Arg Ser Phe Arg Val Asn Glu Leu		
		80

85 90 95  
 Phe Gln Ile Arg Lys Ala Asn Asp Gln Leu Leu Ser Ile Thr Ser Tyr  
 100 105 110  
 Ser Ala Lys Thr Val Tyr Asp Leu Ile Leu Glu Val Tyr Val Glu Gly  
 115 120 125  
 Gly Ser Gln Tyr Val Pro Ile Ala Tyr Leu Asp Ser Ile Pro Gly Phe  
 130 135 140  
 Ser Gln Phe Glu Phe Lys Pro Ser Leu Ile Asn Gly Asn Phe Ile Tyr  
 145 150 155 160  
 Lys Lys Asp Asn Gly Val Asp Thr Leu Ser Leu Ser Ser Leu Asn Glu  
 165 170 175  
 Lys Arg Met Lys Phe Arg Leu Leu Ser Asp Asp Lys His Phe Glu Met  
 180 185 190  
 Leu Ser Lys Ile Asp Ala Glu Trp Asn Ile Ser Phe Ser Asn Tyr Asp  
 195 200 205  
 Trp Lys Pro Gly Tyr Glu Ser Gly Ser Trp Arg Glu Leu Ser Ala Ile  
 210 215 220  
 Tyr Ala Arg Glu Trp Val Val Ile Ile Thr Asn Tyr Ala Tyr Met Met  
 225 230 235 240  
 Thr Thr Pro Glu Tyr Ala Phe Ile Met Arg Asn Phe Ser Lys Ile Phe  
 245 250 255  
 Gly Gly Glu Leu Tyr Asp Asn Asn Arg Val Lys Phe Thr Pro Glu Lys  
 260 265 270  
 Tyr Leu Ser Glu Glu Lys Arg Phe Lys Gln Pro His Asn Phe Val Cys  
 275 280 285  
 Gly Arg Ser Lys Pro Ser Val Gly Gly Leu Gly Gly Asn Val Trp  
 290 295 300  
 Gly Val Thr His Trp Asn Tyr Tyr Gly His Tyr Ala Ser Phe Ser Gly  
 305 310 315 320  
 Trp Glu Ser Ile Thr His Glu Phe Met His Cys Met Gly Tyr Gly His  
 325 330 335  
 Ser Ser Asn Met Thr Tyr Ala Ser Gly Gly Val Gly Trp Thr Glu Phe  
 340 345 350  
 Met Trp Gln Leu His Thr Tyr Leu Arg Gly Asn Asp Trp Leu Pro Tyr  
 355 360 365  
 Thr Asp Arg Asn Leu Leu Gly Phe His Lys Pro Glu Asn Ala Lys Tyr  
 370 375 380  
 Arg Asp Gly Gly Ile Asp Pro Asp Lys Leu Asn Asp Asn Lys Ile Leu  
 385 390 395 400  
 Gln Phe Tyr Asn Lys Ser Lys Val Thr Gln Tyr Phe Leu Ala Asn Pro  
 405 410 415  
 Leu Ser Lys

<210> 6778  
 <211> 158  
 <212> PRT  
 <213> B.fragilis

<400> 6778  
 Thr Lys Ile Ile Ile Phe Val Pro Met Lys Gln Ser Leu Thr Ser Ala  
 1 5 10 15  
 Arg Arg Pro Leu Glu Ile Leu Ile His Ile Ile Ser Trp Gly Ile Val  
 20 25 30  
 Phe Gly Phe Pro Phe Phe Phe Ile Asp Arg Thr Gly Asp Ser Ile Asn  
 35 40 45  
 Trp His Ala Tyr Leu Arg His Ser Ala Val Pro Leu Ser Phe Val Thr  
 50 55 60  
 Val Phe Tyr Leu Asn Tyr Phe Leu Leu Val Pro His Leu Leu Phe Gln



65					70					75				80	
Glu	Gln	Lys	Asn	Lys	Tyr	Ile	Ile	Tyr	Asn	Ile	Leu	Leu	Val	Cys	Leu
				85					90					95	
Ile	Gly	Leu	Leu	Leu	His	Ile	Trp	Gln	Ser	Leu	Asn	Ala	Pro	Ala	Pro
			100					105					110		
Thr	Leu	Lys	Lys	Pro	His	Met	Pro	Pro	Gly	Trp	Asp	Phe	Phe	Arg	Lys
		115					120					125			
Arg	His	Ser	Lys	Pro	His	Leu	His	His	Arg	Thr	Glu	Cys	Arg	His	Pro
	130					135					140				
His	Glu	Cys	Pro	Val	Gly	Asp	Lys	Leu	Lys	Pro	Arg	Pro	Ser		
145					150					155					

&lt;210&gt; 6779

&lt;211&gt; 515

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6779

Cys	Pro	Asn	Met	Tyr	Ile	Pro	Asp	Pro	Asn	Arg	Met	Met	Ser	Ser	Leu
1				5					10					15	
Ser	Thr	Val	Arg	Ser	Ile	Tyr	Tyr	Arg	Gly	Ser	Leu	Glu	His	Cys	Asn
		20						25					30		
Tyr	Thr	Cys	Ser	Tyr	Cys	Pro	Phe	Gly	Arg	Lys	Ser	Val	Ser	Ala	Asp
		35					40					45			
Thr	Thr	Glu	Asp	Gln	Glu	Ala	Leu	Asp	Arg	Phe	Ile	Ser	Arg	Ile	Gly
	50					55					60				
Gly	Trp	Lys	Tyr	Gly	Ser	Leu	Arg	Ile	Leu	Ile	Ile	Pro	Tyr	Gly	Glu
65				70					75					80	
Ala	Met	Ile	His	Arg	Tyr	Tyr	Arg	Glu	Gly	Ile	Met	Arg	Leu	Ala	Ala
			85					90					95		
Met	Pro	His	Val	Ile	Gly	Val	Ser	Cys	Gln	Thr	Asn	Leu	Ser	Phe	Ser
			100					105					110		
Val	Ser	Arg	Phe	Leu	Asp	Glu	Ala	Glu	Ala	Glu	Gln	Ala	Asp	Val	Ser
		115				120						125			
Lys	Phe	Arg	Phe	Trp	Ala	Ser	Tyr	His	Pro	Glu	Met	Val	Gly	Val	Gly
	130				135					140					
Glu	Phe	Ala	Ser	Lys	Val	Glu	Met	Leu	Arg	Ala	Ala	Gly	Ile	Gly	Val
145				150					155						160
Cys	Ala	Gly	Ala	Val	Gly	Asp	Pro	Ser	Ala	Lys	Glu	Gln	Ile	Arg	Lys
				165					170					175	
Leu	Arg	Gln	Leu	Leu	Asp	Pro	Ser	Val	Tyr	Leu	Phe	Val	Asn	Ala	Met
			180					185					190		
Gln	Gly	Leu	Arg	Lys	Pro	Leu	Ser	Glu	Glu	Asp	Ile	Arg	Phe	Phe	Gly
		195				200						205			
Glu	Ile	Asp	Asn	Leu	Phe	Asp	Tyr	Asp	Arg	Arg	Asn	Ala	Lys	Ala	Cys
	210					215					220				
Leu	Asp	Gly	Cys	Val	Gly	Gly	Arg	Glu	Thr	Leu	Phe	Ile	Asp	Arg	Lys
225				230					235						240
Gly	Asp	Met	Tyr	Ala	Cys	Pro	Arg	Ser	Gly	Ile	Arg	Met	Gly	Asn	Phe
				245				250					255		
Tyr	Asp	Asp	Pro	Thr	Ser	Asp	Phe	Gln	Pro	Phe	Cys	Leu	Arg	Lys	Val
		260				265							270		
Cys	Asp	Trp	Tyr	Ile	Ala	Leu	Ser	Asn	Leu	Cys	Asp	Thr	Pro	Leu	Arg
	275					280						285			
Arg	Met	Met	Gly	Asp	Gly	Ala	Met	Trp	Arg	Ile	Leu	Glu	Arg	Lys	Lys
	290					295					300				
Val	Glu	Ala	Val	Phe	Phe	Asp	Val	Asp	Gly	Thr	Leu	Thr	Asp	Ala	Gln
305				310					315					320	
Gly	Arg	Ile	Pro	Asp	Arg	Thr	Val	Ser	Val	Leu	Glu	Tyr	Met	Ala	Lys

325	330	335
Arg Leu Pro Leu Tyr Leu Ser Thr Ala	Leu Pro Val Ser His Ala Lys	
340	345	350
Lys Arg Leu Gly Asn Val Phe Gly Leu Phe Ser Gly Gly Val Phe Ala		
355	360	365
Asp Gly Gly Leu Leu Cys Tyr Gly Glu Thr Ile Glu Cys Val Pro Ile		
370	375	380
Ala Asn Pro Val Thr Ala Gly Phe Pro Gly Cys Arg Val Thr Arg Tyr		
385	390	395
Thr Arg Glu Gly Lys Val Phe Lys Tyr Ala Val Leu Ala Pro Asn Thr		
405	410	415
Arg Glu Ala Val Arg Trp Leu Thr Glu Leu Asp Glu Glu Ala Tyr Gln		
420	425	430
Leu Tyr Gln Glu Gly Arg Leu Leu Thr Val Val Asp Ser Lys Ala Gly		
435	440	445
Lys Lys Asn Gly Leu Ile Thr Leu Cys Ala Arg Leu Gly Ile Ser Leu		
450	455	460
Arg Glu Val Leu Val Val Gly Asn Thr Met His Asp Trp Pro Met Met		
465	470	475
Ser Val Ala Gly Tyr Ser Cys Ala Val Met Asp Ala Glu Glu Lys Leu		
485	490	495
Arg Lys Leu Ser Gly Tyr Val Leu Asn Pro Asp Ser Ile Pro Val Phe		
500	505	510
Phe Asp Ile		
515		

<210> 6780  
 <211> 395  
 <212> PRT  
 <213> B.fragilis

<400> 6780

Asn Leu Val Met Lys Lys Ile His Ile Gly Leu Leu Pro Arg Ile Ile		
1	5	10
Ile Ala Ile Ile Leu Gly Ile Ala Ile Gly Asn Phe Leu Pro Thr Pro		
20	25	30
Leu Val Arg Leu Phe Val Thr Phe Asn Ser Ile Phe Gly Glu Phe Leu		
35	40	45
Asn Phe Ser Ile Pro Leu Ile Ile Leu Gly Leu Val Thr Ile Ala Ile		
50	55	60
Ala Asp Ile Gly Lys Gly Ala Gly Arg Met Leu Leu Val Thr Ala Leu		
65	70	75
Ile Ala Tyr Gly Ala Thr Leu Phe Ser Gly Phe Leu Ser Tyr Phe Thr		
85	90	95
Gly Ala Ala Ile Phe Pro Ser Leu Ile Thr Pro Gly Ala Pro Leu Asp		
100	105	110
Glu Val Ser Glu Ala Gln Gly Ile Leu Pro Tyr Phe Ser Val Ala Ile		
115	120	125
Pro Pro Leu Met Asn Val Met Thr Ala Leu Val Leu Ala Phe Thr Leu		
130	135	140
Gly Leu Gly Leu Ala Ser Leu His Ser Asp Ala Leu Lys Asn Val Ala		
145	150	155
Arg Asp Phe Gln Glu Ile Ile Val Arg Met Ile Ser Ala Val Ile Leu		
165	170	175
Pro Leu Leu Pro Ile Tyr Ile Phe Gly Ile Phe Leu Asn Met Thr His		
180	185	190
Ser Gly Gln Val Phe Ser Ile Leu Met Val Phe Ile Lys Ile Ile Gly		
195	200	205
Val Ile Phe Ile Leu His Ile Phe Leu Leu Val Phe Gln Tyr Cys Ile		

210	215	220
Ala Ala Leu Phe Val Arg Lys Asn Pro Phe Arg Leu Leu Gly Arg Met		
225	230	235
Leu Pro Ala Tyr Phe Thr Ala Leu Gly Thr Gln Ser Ser Ala Ala Thr		
	245	250
Ile Pro Val Thr Leu Glu Gln Thr Lys Lys Asn Gly Val Ser Ala Asp		
	260	265
Ile Ala Gly Phe Val Ile Pro Leu Cys Ala Thr Ile His Leu Ser Gly		
	275	280
Ser Thr Leu Lys Ile Val Ala Cys Ala Leu Ala Leu Met Met Met Gln		
	290	295
Gly Met Pro Phe Asp Phe Ser Leu Phe Ala Gly Phe Ile Phe Met Leu		
305	310	315
Gly Ile Thr Met Ile Ala Ala Pro Gly Val Pro Gly Gly Ala Ile Met		
	325	330
Ala Ser Leu Gly Ile Leu Gln Ser Met Leu Gly Phe Asp Glu Ser Ala		
	340	345
Gln Ala Leu Met Ile Ala Leu Tyr Ile Ala Met Asp Ser Phe Gly Thr		
	355	360
Ala Cys Asn Val Thr Gly Asp Gly Ala Ile Ala Leu Ile Ile Asp Lys		
	370	375
Ile Met Gly Lys Arg Lys Thr Pro Glu Ser Leu		
385	390	395

&lt;210&gt; 6781

&lt;211&gt; 149

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6781

Asn Arg Met Met Lys Arg Lys Leu Glu Ile His Lys Ile Asp Val Ser		
1	5	10
Ser Ser Leu Pro Ile Pro Tyr Ala Asp Glu Gly Ile Arg Ala Gly Phe		
	20	25
Pro Ser Pro Ala Gln Asp Tyr Met Glu Gln Ala Ile Asp Leu Asn Lys		
	35	40
Glu Leu Ile Lys His Pro Ala Ser Thr Phe Phe Gly Arg Val Val Gly		
	50	55
Asp Ser Met Arg Asp Glu Gly Ile Glu Glu Gly Asp Ile Leu Val Ile		
65	70	75
Asp Lys Ser Leu Glu Leu Gln Asp Asp Asp Leu Ala Val Cys Phe Ile		
	85	90
Asp Gly Asp Phe Thr Val Lys Arg Val Arg Ile Glu Pro Asn Ala Val		
	100	105
Trp Leu Ile Pro Ala Asn Pro Lys Tyr Ser Leu Ile Lys Val Thr Lys		
	115	120
Glu Asn Glu Phe Ile Val Trp Gly Ile Val Thr Tyr Thr Ile Lys Lys		
	130	135
Asn Arg Arg Lys Arg		
145		

&lt;210&gt; 6782

&lt;211&gt; 319

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6782

Phe Met Lys Ile Val Val Leu Asp Gly Tyr Ala Ala Asn Pro Gly Asp		
1	5	10
		15

Leu Asn Trp Asp Glu Leu Arg Thr Leu Gly Glu Cys Glu Ile Tyr Asp  
 20 25 30  
 Arg Thr Ala Pro Asp Glu Val Leu Glu Arg Ser Lys Asp Ala Glu Ala  
 35 40 45  
 Ile Leu Thr Asn Lys Val Val Ile Thr Ala Glu His Met Ala Ser Leu  
 50 55 60  
 Pro Asn Leu Lys Tyr Ile Gly Val Ile Ala Thr Gly Tyr Asn Ile Ile  
 65 70 75 80  
 Asp Val Ala Ala Ala Lys Glu Arg Gly Ile Thr Val Thr Asn Ile Pro  
 85 90 95  
 Ala Tyr Ser Thr Pro Ser Val Gly Gln Met Val Phe Ala His Ile Leu  
 100 105 110  
 Asn Ile Thr Gln Arg Val Gln His Tyr Ala Asp Glu Val Arg Gln Gly  
 115 120 125  
 Arg Trp Thr Gln Ser Gln Asp Phe Cys Tyr Trp Asp Thr Pro Leu Ile  
 130 135 140  
 Glu Leu Leu Gly Lys Lys Ile Gly Leu Ile Gly Leu Gly Gln Thr Gly  
 145 150 155 160  
 Tyr Asn Thr Ala Arg Ile Ala Ile Gly Phe Gly Met Lys Val Trp Ala  
 165 170 175  
 Tyr Thr Ser Lys Ser Arg Leu Gln Leu Pro Pro Glu Ile Arg Lys Ala  
 180 185 190  
 Glu Leu Asp Gln Ile Phe Arg Glu Cys Asp Ile Val Ser Leu His Cys  
 195 200 205  
 Pro Leu Thr Glu Ser Thr Arg Asp Leu Val Asn Thr Arg Arg Leu Glu  
 210 215 220  
 Leu Met Lys Pro Asn Ala Ile Leu Ile Asn Thr Ser Arg Gly Pro Leu  
 225 230 235 240  
 Val Asn Glu His Asp Leu Ala Glu Ala Leu Asn Asn Tyr Lys Ile Tyr  
 245 250 255  
 Ala Ala Gly Leu Asp Val Leu Ser Thr Glu Pro Pro Arg Ala Asp Asn  
 260 265 270  
 Pro Leu Leu Thr Ala Arg Asn Cys Phe Ile Thr Pro His Ile Ala Trp  
 275 280 285  
 Ala Thr Ser Ala Ala Arg Glu Arg Leu Met Ala Ile Leu Val Asp Asn  
 290 295 300  
 Leu Lys Ala Tyr Ile Gly Gly Lys Pro Val Asn Asn Val Ala Lys  
 305 310 315

&lt;210&gt; 6783

&lt;211&gt; 267

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6783

Asn Ile Arg Val Ala Met Ile Lys Lys Ser Asp Lys Lys Asn Val Lys  
 1 5 10 15  
 Lys Cys Ile Arg Thr Asn Phe Asn Phe Tyr Leu Cys Pro Asn Leu Tyr  
 20 25 30  
 Ala Met Leu Val Pro Thr Met Thr Thr Glu Glu Val Cys Lys Glu Ile  
 35 40 45  
 Lys Asn Asp Tyr Pro Ala Phe Tyr Glu Lys Met Leu Asp Asn Lys Ala  
 50 55 60  
 Ser Asn Tyr Arg Lys Phe Ile Lys Ala Val Leu Phe Pro Val Ile His  
 65 70 75 80  
 Gln Phe Ser Trp Lys Ser Ser Ser Gly Asn Met Trp Asn Val Ile Met  
 85 90 95  
 Leu Ala Arg Tyr Arg Asn Glu Arg Lys Cys Pro Gly Ile Val Pro Tyr  
 100 105 110

Leu Lys Tyr Glu Asn Trp Gly Met Gly Ile Ile Tyr Pro Lys Asn Ile  
 115 120 125  
 Tyr Ser Asn Leu Ser Ile Ile Asp Phe Lys Pro His Phe Trp Lys Arg  
 130 135 140  
 Tyr Arg Glu Arg Gln Leu Ile Pro Asn Gly Leu Glu Gly Ile Ser Phe  
 145 150 155 160  
 Asp Glu Gln Ile Lys Tyr Phe Phe Leu Asn Ser Gly Leu Phe Thr Phe  
 165 170 175  
 Asp Phe Arg Glu Gly Ser Asn Lys Gly His Glu Gly Phe Val Gly Tyr  
 180 185 190  
 Thr Lys Thr Gly Ile Phe Phe Gly Val Val Ile Lys Glu Leu Asp Tyr  
 195 200 205  
 Leu Cys Val Lys Thr Tyr Val Ser Ala Asn Met Leu Phe Asp Asn Gln  
 210 215 220  
 Ile Glu Ser Leu Asp Ser Ala Asp Glu Leu Arg Glu Lys Ile Leu Ser  
 225 230 235 240  
 His Pro Asp Tyr Phe Gln Lys Arg Gly Lys Leu Phe His Ile Met Asn  
 245 250 255  
 Asp Ser Ser Phe Trp Met Asp Glu Thr Ile Arg  
 260 265

<210> 6784

<211> 287

<212> PRT

<213> B.fragilis

<400> 6784

Asn His Phe Ser Met Glu Ile Asp Glu Leu Pro Ser Gly Thr Gln Asp  
 1 5 10 15  
 Gln Lys Pro Asp Ile Asp Met Asn Glu Ile Val Gly Thr His Asp Ile  
 20 25 30  
 Leu Met Leu Cys Phe Asp Thr Leu Arg Tyr Asp Val Ser Val Ala Glu  
 35 40 45  
 Glu Ala Ser Gly Gly Thr Pro Val Leu Asn Ser Cys Gly Asn Gly Trp  
 50 55 60  
 Glu Lys Arg His Ala Pro Gly Asn Phe Thr Tyr Pro Ser His Phe Ala  
 65 70 75 80  
 Ile Phe Ala Gly Phe Leu Pro Ser Pro Ala Glu Pro His Met Leu Arg  
 85 90 95  
 Asn Arg Lys Trp Leu Phe Phe Pro Phe Gln Ala Gly Thr Gly Arg Ile  
 100 105 110  
 Pro Pro Glu Gly Ser Tyr Ala Phe Lys Glu Ala Thr Phe Val Gln Ser  
 115 120 125  
 Leu Ala Gln Val Gly Tyr Glu Thr Ile Cys Ile Gly Gly Val Asn Phe  
 130 135 140  
 Phe Ser Lys Arg Asn Asp Ile Gly Arg Val Phe Pro Gly Tyr Phe Asn  
 145 150 155 160  
 Lys Ser Tyr Trp Leu Pro Thr Phe Gly Cys Thr Asp Lys Asn Ser Ala  
 165 170 175  
 Ala Asn Gln Val Asp Phe Ala Val Asp Lys Leu Glu Lys Tyr Pro Ala  
 180 185 190  
 Asp Arg Lys Val Phe Met Tyr Ile Asn Phe Ser Ala Ile His Tyr Pro  
 195 200 205  
 Asn Cys His Tyr Val Glu Gly Lys Lys Lys Asp Asp Lys Glu Ser His  
 210 215 220  
 Ala Ala Ala Leu Arg Tyr Val Asp Ser Gln Leu Pro Arg Leu Phe Glu  
 225 230 235 240  
 Ala Phe Arg Arg Arg Ser Asp Thr Leu Val Ile Ala Leu Ser Asp His  
 245 250 255

Gly Thr Cys Tyr Gly Glu Asp Gly Tyr Glu Tyr His Cys Ile Ser His  
 260 265 270  
 Glu Lys Val Tyr Thr Val Pro Tyr Lys His Phe Ile Leu Arg Lys  
 275 280 285

<210> 6785  
 <211> 432  
 <212> PRT  
 <213> B.fragilis

<400> 6785

Thr Leu Tyr Ser Gln Lys Met Asn Glu Gln Gln Gln Ile Ser Arg Tyr  
 1 5 10 15  
 Val Ser Tyr Met Tyr Ser Tyr Pro His Lys Thr Ala Tyr Arg Thr Leu  
 20 25 30  
 Thr Pro Pro Val Ser Leu Ser Pro Tyr Leu Glu Arg Leu Glu Gly Arg  
 35 40 45  
 Glu Ala Ser Leu Tyr Phe His Ile Pro Phe Cys Ala His Lys Cys Gly  
 50 55 60  
 Tyr Cys Asn Leu Phe Ser Gln Gln Cys Cys Asp Ala Glu Arg Ile Ser  
 65 70 75 80  
 Leu Tyr Leu His Thr Met Arg Arg Gln Ala Glu Gln Leu Ser Val Ala  
 85 90 95  
 Ala Gln Gly Leu Lys Phe Thr Ser Phe Ala Val Gly Gly Gly Thr Pro  
 100 105 110  
 Leu Ile Leu Asp Glu Gly Gln Leu Glu Glu Leu Phe Cys Leu Ala Glu  
 115 120 125  
 Leu Phe Gly Val His Pro Ser Arg Val Phe Thr Ser Val Glu Thr Ser  
 130 135 140  
 Pro Glu Tyr Thr Gln Lys Ser Val Leu Arg Gln Leu Arg Ala Arg Gly  
 145 150 155 160  
 Val Glu Arg Leu Ser Met Gly Val Gln Ser Phe Asn Glu Thr Glu Leu  
 165 170 175  
 Lys Lys Leu Lys Arg Arg Pro Gly Leu Gly Thr Val Val Gly Ala Leu  
 180 185 190  
 Glu Asn Ile Val Glu Ala Gly Phe Pro Gln Phe Asn Leu Asp Leu Ile  
 195 200 205  
 Tyr Gly Ile Glu Gly Gln Thr Val Glu Ser Phe Met Arg Ser Leu Asn  
 210 215 220  
 Thr Ala Leu Thr Tyr Arg Pro Asn Glu Leu Phe Ile Tyr Pro Leu Tyr  
 225 230 235 240  
 Val Arg Pro Gly Thr Arg Ile Asp Val Arg Ser Thr Asp Asp Ile Gly  
 245 250 255  
 Tyr Ala Ile Tyr Lys Ser Ala Arg Glu Leu Leu Val Gly Gln Gly Phe  
 260 265 270  
 Val Gln Thr Ser Met Arg Arg Phe Val Arg Arg Glu Thr Thr Glu Thr  
 275 280 285  
 Glu Phe Ser Cys Gly Asp Glu Val Met Leu Ser Cys Gly Ala Gly Gly  
 290 295 300  
 Arg Ser Tyr Leu Gly Asn Leu His Tyr Ala Thr Pro Tyr Ala Val Arg  
 305 310 315 320  
 Gln Gln Ala Ile Ala Asp Glu Ile Asp His Tyr Ile Arg Thr Thr Asp  
 325 330 335  
 Phe Met Thr Ala Ala Asn Gly Phe Leu Leu Ser Thr Glu Glu Met Gln  
 340 345 350  
 Ile Arg Phe Ile Ile Lys Asn Leu Met Tyr His Arg Gly Val Asp Leu  
 355 360 365  
 Ala Glu Tyr Glu Lys Arg Phe Gly Glu Lys Pro Asp Arg Asn Leu Phe  
 370 375 380

Arg Glu Phe Thr Asp Arg Gly Trp Ile Glu Glu Thr Gly Arg Ile Val  
 385 390 395 400  
 Arg Leu Thr Glu Glu Gly Met Ala Tyr Ser Asp Tyr Ile Gly Gln Ala  
 405 410 415  
 Phe Ile Ser Pro Ala Val Arg Lys Leu Met Ser Glu Tyr Val Tyr Pro  
 420 425 430

<210> 6786

<211> 535

<212> PRT

<213> B.fragilis

<400> 6786

Val Met Asn Thr Lys Thr Lys Leu Leu Tyr Val Gly Phe Arg Ala Leu  
 1 5 10 15  
 Asn Thr Cys Cys Leu Tyr Ala Ala Phe Leu Met Ile Thr Ser Cys Gly  
 20 25 30  
 Asp Asn Val Val Asn Pro Asp Ser Pro Glu Pro Asp Gly Glu Asp Met  
 35 40 45  
 Ile Pro Val Thr Val Ser Arg Val Glu Asp Gly Ser Tyr Met Glu Ser  
 50 55 60  
 His Val Asp Thr Pro Asp Thr Thr Gly Gly Arg Thr Leu Val Asp Glu  
 65 70 75 80  
 Trp Val Pro Val Lys Glu Pro Pro Ala Ser Arg Ala Ile Pro Ala Ala  
 85 90 95  
 Val Pro Tyr Glu Gly Pro Ser Ala Val Arg Met Thr Leu Arg Glu Glu  
 100 105 110  
 Pro Gln Val Thr Thr Arg Ala Ala Thr Leu Gly Asn Asp Ile Tyr Phe  
 115 120 125  
 Arg Leu Ile Ala Phe Arg Lys Val Gly Ser Asn Tyr Val Phe Gln Ser  
 130 135 140  
 Ala Ala Asp Phe Thr Thr Asn Gly Ala Ser Ala Pro Thr Leu Arg Gln  
 145 150 155 160  
 Gly Asn Leu Leu Thr Arg Ala Gly Thr Val Arg Val Ile Gly Tyr Ser  
 165 170 175  
 Phe Asn Ser Thr Ala Ala Met Gly Thr Ile Pro Ser Ser Tyr Thr Tyr  
 180 185 190  
 Asn Ser Thr Ser Val Thr Ile Pro Asp Met Asn Ser Asp Phe Met Val  
 195 200 205  
 Tyr Asp Ser Gly Asp Ile Ala Asn Val Ser Thr Ile Ser His Asn Leu  
 210 215 220  
 Ser Val Ser Phe Thr Gln Lys Leu Cys Lys Leu Thr Val Lys Leu Ser  
 225 230 235 240  
 Leu Ser Gln Phe Gly Ser Asn Thr Phe Thr Asn Cys Thr Gly Val Tyr  
 245 250 255  
 Val Ser Gln Gly Gly Asn Ala Ser Ala Trp Thr Ile Gly Pro Ser Thr  
 260 265 270  
 Asn Asn Val Ser Ala Asn Thr Gly Asn Thr Pro Thr Phe Asn Ile Ala  
 275 280 285  
 Asn Asn Ser Thr Ala Thr Val Arg Leu Val Pro Phe Ser Gly Ser Arg  
 290 295 300  
 Ala Ile Thr Val His Ile Gly Thr Leu Lys Leu Ser Asn Tyr Phe Asn  
 305 310 315 320  
 Ala Asn Asn Arg Asn Ile Thr Ser Ser Gln Asn Val Gln Leu Leu Pro  
 325 330 335  
 Gly Lys Ser Tyr Thr Ile Thr Leu Lys Phe Glu Leu Gly Ile Gln Leu  
 340 345 350  
 Ala Ala Ser Asp Ile Asn Leu Thr Gln Asn Gly Cys Thr Ala Ser Asp  
 355 360 365

Lys Asn Asp Leu Ala Lys Leu Arg Trp Ala Thr Gly Asn Leu Lys Ser  
 370 375 380  
 Thr Gly Asn Val Asn Tyr Val Trp Ala Ser Ser Gln Thr Glu Gly Gly  
 385 390 395 400  
 His Phe Tyr Ser Phe Asn Lys Leu Tyr Asp Gly Ser Thr Gly Asp Pro  
 405 410 415  
 Cys Ser Lys Leu Asn Thr Ala Tyr Tyr Gly Thr Ser Trp Arg Thr Pro  
 420 425 430  
 Thr Lys Asn Glu Leu Glu Lys Leu Val Arg Cys Thr Asp Arg Val Tyr  
 435 440 445  
 Asn Gly Gly Met Trp Phe Met Asn Asn Arg Leu Gly Leu Phe Leu Lys  
 450 455 460  
 Ala Ala Gly Met Arg Pro Glu Thr Gly Pro Gly Leu Glu Gly Thr Gly  
 465 470 475 480  
 Ser Gly Thr Ser Gly Val Tyr Leu Thr Ser Thr Leu Gly Asn Arg Lys  
 485 490 495  
 Asn Thr Cys Tyr Ala Leu Asp Phe Gly Thr Thr Tyr Ile Val Val Thr  
 500 505 510  
 Asp Thr Gly Ala Trp Asn Ala Leu Gln Ile Asn Gly Tyr Ser Val Arg  
 515 520 525  
 Cys Val Lys Gly Thr Lys Gln  
 530 535

<210> 6787  
 <211> 474  
 <212> PRT  
 <213> B.fragilis

<400> 6787  
 Pro Cys Ile Asn Asn His Thr Ser Tyr Asn Tyr Tyr Lys Phe Arg Ile  
 1 5 10 15  
 Lys Met Asn Arg Glu Asn Lys Pro Leu Phe Leu Tyr Thr Phe Ile Thr  
 20 25 30  
 Val Phe Gly Gly Leu Ile Val Gly Leu Asn Met Ala Gly Ile Ser Gly  
 35 40 45  
 Ala Val Pro Phe Leu Gln Glu Gln Phe Met Leu Asp Asp Met Ala Leu  
 50 55 60  
 Gly Leu Val Val Ser Ile Leu Thr Val Gly Cys Leu Cys Gly Ala Leu  
 65 70 75 80  
 Leu Gly Gly Gly Phe Ser Asp Arg Tyr Gly Arg Gln Lys Val Met Phe  
 85 90 95  
 Ser Ser Ala Val Phe Phe Ile Val Ser Ser Leu Gly Cys Ala Leu Ser  
 100 105 110  
 Gly Asn Leu Val Ser Leu Leu Val Phe Arg Leu Ile Cys Gly Leu Gly  
 115 120 125  
 Ile Gly Val Ile Ser Ala Val Ala Pro Ile Tyr Ile Ser Glu Ile Ser  
 130 135 140  
 Pro Ala Arg Leu Arg Gly Thr Leu Val Ser Tyr Asn Gln Leu Ala Ile  
 145 150 155 160  
 Val Ile Gly Ile Leu Ile Ala Tyr Ile Val Asp Tyr Ile Leu Leu Asp  
 165 170 175  
 Tyr Glu Arg Asn Trp Arg Leu Met Leu Gly Phe Pro Phe Phe Ser  
 180 185 190  
 Val Ala Tyr Leu Leu Leu Leu Gly Ile Leu Pro Glu Ser Pro Arg Trp  
 195 200 205  
 Leu Ser Ala Arg Gly Lys Ala Gly Arg Ala Arg Gln Val Ala Ser Lys  
 210 215 220  
 Leu Asn Leu Glu Ala Gly Glu Met Thr Val Ser Asp Thr Asn Thr Gln  
 225 230 235 240



Glu Gly Arg Asp Arg Ile Lys Val Thr Glu Leu Phe Lys Gly Asn Leu  
 245 250 255  
 Ala Lys Val Val Phe Ile Gly Ser Ile Leu Ala Ala Leu Gln Gln Ile  
 260 265 270  
 Thr Gly Ile Asn Val Ile Ile Asn Tyr Ala Pro Ser Ile Phe Glu Met  
 275 280 285  
 Thr Gly Val Ala Gly Asp Ile Ala Leu Val Gln Ser Ile Leu Val Gly  
 290 295 300  
 Val Val Asn Leu Leu Phe Thr Leu Ile Ala Val Trp Leu Val Asp Lys  
 305 310 315 320  
 Val Gly Arg Lys Ile Leu Leu Leu Cys Gly Ser Leu Gly Met Gly Ile  
 325 330 335  
 Ser Leu Leu Tyr Leu Val Tyr Thr Phe Val Val Pro Ala Ala Asn Gly  
 340 345 350  
 Ile Gly Ala Leu Ile Ala Val Leu Cys Tyr Ile Gly Phe Phe Ala Ala  
 355 360 365  
 Ser Leu Ala Pro Leu Met Trp Val Val Thr Ser Glu Ile Tyr Pro Ser  
 370 375 380  
 Arg Ile Arg Gly Thr Ala Met Ser Leu Ser Thr Gly Ile Ser Trp Leu  
 385 390 395 400  
 Cys Thr Phe Leu Thr Val Gln Phe Phe Pro Trp Ile Leu Asn Asn Leu  
 405 410 415  
 Gly Gly Ser Val Ala Phe Gly Ile Phe Ala Ile Phe Ser Ile Ala Ala  
 420 425 430  
 Phe Ala Phe Ile Leu Phe Cys Val Pro Glu Thr Lys Gly Lys Ser Leu  
 435 440 445  
 Glu Ala Ile Glu Lys Glu Leu Gly Val Asp Lys Glu Ala Glu Glu Asn  
 450 455 460  
 Val Lys Glu Glu His Ala Phe Ser Lys Ile  
 465 470

<210> 6788  
 <211> 184  
 <212> PRT  
 <213> B.fragilis

<400> 6788  
 Gly Glu Cys Glu Arg Arg Thr Cys Phe Leu Glu Asn Ile Ile Asn Thr  
 1 5 10 15  
 Lys Leu Asp Ile Ser Met Lys Gln Ser Lys Arg Asn Val Trp Trp Ser  
 20 25 30  
 Val Cys Ala Gly Leu Leu Phe Cys Ser Trp Gly Cys Ser Ser Arg Val  
 35 40 45  
 Ser Asp Lys Pro Val Thr Leu Glu Thr Leu Leu Asp Glu Met Val Ser  
 50 55 60  
 Val Glu Glu Gln Ala Leu Tyr Pro Val Pro Ser Tyr Thr Cys Arg Gln  
 65 70 75 80  
 Glu Ser Ser Tyr Asp Arg Ala Ser Val Ser Pro Asp Ser Ala Gly Trp  
 85 90 95  
 Phe Ala Asn Ser Asp Gly Phe Gly Ile Lys Arg Val Asp Thr Val Ala  
 100 105 110  
 Gly Arg Ile Glu Lys Val Met Phe Asp Glu Val Gly Pro Gly Ala Ile  
 115 120 125  
 Thr Arg Ile Trp Ile Thr Thr Ile Asp Lys Arg Gly Thr Trp Arg Phe  
 130 135 140  
 Tyr Phe Asp Gly Ser Asp Gln Pro Gly Trp Ile Ile Pro Ala His Asp  
 145 150 155 160  
 Leu Leu Arg Ile Asn Val Pro Gly Leu Gly Lys Val Met Leu His Gly  
 165 170 175

Thr His His Leu Tyr Ala Leu Trp  
180

<210> 6789  
<211> 61  
<212> PRT  
<213> B.fragilis

<400> 6789  
Cys Asn Lys Asp Lys Thr Leu Phe Ser Ser Val Gln Ile Phe Ile His  
1 5 10 15  
Tyr Ser Asn Asn Gln Leu Phe Ile Ser Ser Ser Tyr Ile Gln Cys Thr  
20 25 30  
Glu Pro Lys Gln Cys Phe Lys Lys Gly Thr Ser Phe Glu Thr Gln Glu  
35 40 45  
Ser Phe Tyr Leu Ser Asn Leu His Lys Leu Thr Ala Lys  
50 55 60

<210> 6790  
<211> 503  
<212> PRT  
<213> B.fragilis

<400> 6790  
Tyr Met Asn Arg Thr Phe Ile Met Arg Glu Cys Leu Gly Lys Ala Leu  
1 5 10 15  
Trp Leu Cys Phe Cys Leu Ser Ile Ala Gly Cys Ala Glu Asp Asp Arg  
20 25 30  
Met Thr Pro Leu Ser Ala Asp Ser Gly Asp Thr Ala Asp Glu Leu Ile  
35 40 45  
Pro Ile His Ile Ser Leu Thr Gly Asp Asn Asp Tyr His Ser Ser Ser  
50 55 60  
Phe Asn Asn Ala Ser Thr Arg Ser His Ser Pro Leu Ile Ala Glu Trp  
65 70 75 80  
Val Gly Val Lys Ala Phe Ser Pro Thr Arg Thr Gly Glu Gln Pro Asp  
85 90 95  
Tyr Asp Gly Pro Arg Ile Ala Ser Met Glu Leu Thr Glu Asp Thr Leu  
100 105 110  
Pro Arg Val Ser Thr Arg Ala Thr Val Pro Ala Gly Val Tyr Phe Arg  
115 120 125  
Leu Ile Val Phe Arg Lys Ser Gly Asn Asn Tyr Val Phe Gln Ser Val  
130 135 140  
Ala Asp Tyr Ala Ser Asn Gly Thr Gly Thr Pro Val Leu Lys Gln Gly  
145 150 155 160  
Lys Leu Leu Thr Arg Ser Gly Thr Ile Arg Met Val Gly Tyr Ser Phe  
165 170 175  
Asn Thr Ala Thr Ala Ala Asp Leu Gly Thr Met Leu Ser Thr Tyr Ala  
180 185 190  
Tyr Asn Ser Ser Thr Val Ser Ile Pro Asn Met Ser Lys Asp Phe Met  
195 200 205  
Thr Phe Asp Ser Gly Asp Ile Thr Asn Val Asn Ser Leu Ser His Asn  
210 215 220  
Leu Pro Val Ser Phe Asn Gln Lys Leu Cys Lys Leu Thr Ile Thr Ile  
225 230 235 240  
Ser Pro Thr Gly Phe Pro Ser Asn Thr Ile Thr Asn Cys Thr Gly Val  
245 250 255  
Tyr Val Lys Gln Gly Gly Asn Ser Thr Ser Trp Lys Ile Gly Pro Ser  
260 265 270  
Thr Asn Val Val Ala Thr Asn Thr Asn Asn Thr Ala Ala Phe Ser Pro

275	Ser Thr Ala Leu Ser Thr	280	Thr Ile Arg Met Val	285	Pro Phe Ala Gly Ala
290	Arg Thr Ile Thr Val His	295	Phe Asn Thr Leu Thr	300	Val Gly Gly Arg Ile
305	Val Asn Asn Asn Thr Glu	310	Ile Thr Ser Thr Gln	315	Ser Val Gln Leu Lys
	325		330		335
Glu Gly Lys Ser Tyr Thr	Leu Lys Ile Gln Phe	Lys Lys Gly Pro Gly			
340		345		350	
Ile Asn Val Leu Glu Ser	Asp Ile Asn Leu Thr	Gly Asn Gly Cys Thr			
355		360		365	
Ala Gln Asp Lys Lys Asp	Leu Ala Lys Leu Ile	Trp Ala Asp Gly Asn			
370		375		380	
Leu Lys Ser Thr Gly Asn	Ser Asn Tyr Val Trp	Thr Thr Ser Thr Asp			
385		390		395	400
Arg Gly Tyr Tyr Tyr Thr	Trp Tyr Ser Thr Tyr	Thr Gly Asn Thr Ser			
	405	410		415	
Gln Asn Asn Thr Asp Pro	Cys Ser Lys Leu Asn	Val Ser Thr Tyr Gly			
420		425		430	
Thr Gly Trp Arg Thr Pro	Ser Arg Asn Glu Leu	Thr Lys Leu Ser Arg			
435		440		445	
Cys Thr Asn Lys Ala Lys	Val Asn Asn Gly Met	Trp Phe Met Asn Ser			
450		455		460	
Ser Lys Gly Leu Phe Leu	Pro Leu Ala Gly His	Thr Pro Ser Ala Ser			
465		470		475	480
Gly Ala Asn Thr Gly Gly	Asn Ala Ile Met Asn	Gly Asn Arg His Gly			
	485	490		495	
Asn Tyr Trp Cys Thr Lys	Glu				
500					

<210> 6791  
 <211> 70  
 <212> PRT  
 <213> B.fragilis

<400> 6791

Pro Pro Leu Phe Ile Leu Phe Ser Phe Leu Pro Arg Ile Val Arg Ile	
1 5 10 15	
Phe Phe Pro Asn Thr Met His Ile Gly Ile Val Leu Phe Thr Lys Pro	
20 25 30	
Met Pro Phe Ile Leu Tyr Ser Ala Val Val Leu Ile Tyr Ile Ser Asn	
35 40 45	
Tyr Ile Ser Leu Phe Tyr Arg Leu Tyr Leu Asn Ser Leu Ala Pro Thr	
50 55 60	
Pro Leu Ile Asn Ser Gly	
65 70	

<210> 6792  
 <211> 109  
 <212> PRT  
 <213> B.fragilis

<400> 6792

Leu Phe Pro Ser Phe Asn Cys Thr Leu Trp Val Asp Val Ile Ser Val	
1 5 10 15	
Leu Leu Phe Thr Ile Arg Pro Pro Thr Val Ser Val Leu Lys Cys Thr	
20 25 30	
Val Ile Val Leu Ala Pro Ala Asn Gly Thr Met Arg Met Val Val Leu	
35 40 45	

Arg Ala Val Leu Gly Leu Asn Ala Ala Val Leu Phe Val Leu Val Ala  
 50 55 60  
 Thr Thr Leu Val Glu Gly Pro Ile Phe His Asp Val Glu Phe Pro Pro  
 65 70 75 80  
 Cys Phe Thr Tyr Thr Pro Val Gln Leu Val Ile Val Leu Leu Gly Asn  
 85 90 95  
 Pro Val Gly Leu Met Val Ile Val Ser Leu His Asn Phe  
 100 105

<210> 6793  
 <211> 205  
 <212> PRT  
 <213> B.fragilis

<400> 6793  
 Ile Lys Glu Thr Met Leu Leu Pro Trp Leu Asn Glu Glu Leu Ile Glu  
 1 5 10 15  
 Ala Gly Cys Asp Glu Ala Gly Arg Gly Cys Leu Ala Gly Ala Val Tyr  
 20 25 30  
 Ala Ala Ala Val Ile Leu Pro Lys Asp Phe Glu Asn Glu Leu Leu Asn  
 35 40 45  
 Asp Ser Lys Gln Leu Ser Glu Lys Gln Arg Tyr Ala Leu Arg Glu Val  
 50 55 60  
 Ile Glu Arg Asp Ala Val Ala Trp Ala Ile Gly Ile Val Ser Pro Glu  
 65 70 75 80  
 Glu Ile Asp Lys Ile Asn Ile Leu Asn Ala Ser Phe Leu Ala Met His  
 85 90 95  
 Arg Ala Val Asp Arg Leu Lys Thr Arg Pro Gln His Leu Leu Ile Asp  
 100 105 110  
 Gly Asn Arg Phe Lys Lys Tyr Pro Asp Ile Pro His Thr Thr Val Ile  
 115 120 125  
 Lys Gly Asp Gly Lys Tyr Leu Ser Ile Ala Ala Ala Ser Ile Leu Ala  
 130 135 140  
 Lys Thr Tyr Arg Asp Asp Tyr Met Asn Arg Leu His Gln Glu Phe Pro  
 145 150 155 160  
 Cys Tyr Asp Trp Glu His Asn Lys Gly Tyr Pro Thr Lys Lys His Arg  
 165 170 175  
 Ala Ala Ile Ala Gly His Gly Thr Thr Pro Tyr His Arg Met Thr Phe  
 180 185 190  
 Asn Leu Leu Gly Asp Gly Gln Leu Glu Leu Phe Ser Lys  
 195 200 205

<210> 6794  
 <211> 311  
 <212> PRT  
 <213> B.fragilis

<400> 6794  
 Asn Ile Met Ser Lys Lys Ala Leu Leu Met Ile Leu Asp Gly Trp Gly  
 1 5 10 15  
 Leu Gly Asp His Gly Lys Asp Asp Val Ile Phe Asn Thr Ala Thr Pro  
 20 25 30  
 Tyr Trp Asp Tyr Leu Met Glu Thr Tyr Pro His Ser Gln Leu Gln Ala  
 35 40 45  
 Ser Gly Glu Asn Val Gly Leu Pro Asp Gly Gln Met Gly Asn Ser Glu  
 50 55 60  
 Val Gly His Leu Asn Ile Gly Ala Gly Arg Val Val Tyr Gln Asp Leu  
 65 70 75 80  
 Val Lys Ile Asn Leu Ser Cys Arg Asp Asn Ser Ile Leu Lys Asn Pro

[illegible]

<400> 6795

Gln	Thr	Lys	Gly	Gly	Asn	Lys	Met	Arg	Thr	Tyr	Leu	Tyr	Cys	Glu	Ala
1				5					10					15	
Gly	Phe	Val	Glu	Lys	Ala	Gln	Trp	Leu	His	Asn	Ser	Trp	Val	Asn	Val
			20					25					30		
Val	Cys	Pro	Asp	Ser	Ser	Asp	Phe	Lys	Phe	Leu	Thr	Glu	Thr	Leu	Lys
		35					40					45			
Val	Pro	Glu	Ser	Phe	Leu	Asn	Asp	Ile	Ala	Asp	Thr	Asp	Glu	Arg	Pro
	50					55					60				
Arg	Thr	Glu	Thr	Glu	Gly	Asn	Trp	Leu	Leu	Thr	Ile	Leu	Arg	Ile	Pro
65					70					75					80
Val	Gln	Asn	Ala	Gln	Ser	Ser	Ile	Pro	Tyr	Thr	Thr	Val	Pro	Ile	Gly
				85					90					95	
Ile	Ile	Thr	Asn	Asn	Glu	Ile	Ile	Val	Ser	Val	Cys	Tyr	His	Gln	Thr
			100					105					110		
Asp	Met	Ile	Pro	Asp	Phe	Ile	Glu	His	Thr	Arg	Arg	Lys	Gly	Ile	Glu
		115					120					125			
Val	Arg	Asn	Lys	Leu	Asp	Leu	Ile	Phe	Arg	Leu	Ile	Tyr	Ser	Ser	Ala
	130					135					140				
Val	Trp	Phe	Leu	Lys	Tyr	Leu	Lys	Gln	Ile	Asn	Ile	Asp	Ile	Thr	Ala
145					150					155					160
Ala	Glu	Lys	Glu	Leu	Glu	Arg	Ser	Ile	Arg	Asn	Glu	Asp	Leu	Leu	Arg
				165					170					175	
Leu	Met	Lys	Leu	Gln	Lys	Thr	Leu	Val	Tyr	Phe	Asn	Thr	Ser	Ile	Arg

			180					185					190				
Gly	Asn	Glu	Val	Met	Ile	Gly	Lys	Leu	Lys	Thr	Ile	Phe	Gln	Asp	Thr		
		195					200					205					
Asp	Tyr	Leu	Asp	Glu	Glu	Leu	Val	Glu	Asp	Val	Ile	Ile	Glu	Leu	Lys		
	210					215					220						
Gln	Ala	Phe	Asn	Thr	Val	Asn	Ile	Tyr	Ser	Asp	Ile	Leu	Thr	Gly	Thr		
225					230					235					240		
Met	Asp	Ala	Phe	Ala	Ser	Ile	Ile	Ser	Asn	Asn	Val	Asn	Ala	Ile	Met		
			245					250						255			
Lys	Arg	Met	Thr	Ser	Leu	Ser	Ile	Thr	Leu	Met	Ile	Pro	Thr	Leu	Ile		
		260						265					270				
Ala	Ser	Phe	Tyr	Gly	Met	Asn	Val	Asp	Ile	His	Leu	Glu	Glu	Met	Pro		
	275					280					285						
His	Ala	Phe	Leu	Leu	Ile	Ile	Leu	Val	Ser	Val	Phe	Leu	Ser	Ala	Leu		
	290				295						300						
Ser	Phe	Val	Ile	Phe	Arg	Lys	Ile	Lys	Trp	Phe							
305					310					315							

&lt;210&gt; 6796

&lt;211&gt; 62

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6796

Leu	Arg	Leu	Gly	Arg	Arg	Tyr	Leu	Ala	Phe	Leu	Asn	Gly	Lys	Lys	Lys		
1				5					10					15			
Gln	Leu	Leu	Phe	Phe	Val	Ala	Asn	His	Gly	Glu	Ile	Val	Arg	Thr	Arg		
		20				25						30					
Asn	Met	Leu	Phe	Phe	Phe	Asn	Val	Gly	Gly	Val	Leu	Lys	Phe	Ala	Leu		
	35					40					45						
Cys	Gly	Ile	Thr	Lys	Tyr	Ala	Gly	Leu	Leu	Phe	Val	Phe	Arg				
	50					55					60						

&lt;210&gt; 6797

&lt;211&gt; 192

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6797

Pro	Glu	Lys	Thr	Glu	Ala	Pro	Ala	Arg	Ala	Asn	Pro	Phe	Phe	Gly	Trp		
1				5					10					15			
His	Pro	Glu	His	Ser	Phe	Ser	Pro	Ile	Thr	Thr	Thr	Asp	Phe	Ala	Lys		
		20					25					30					
Ala	Ala	Arg	Val	Glu	Leu	Glu	His	Arg	Gly	Asp	Gly	Ala	Thr	Gly	Trp		
	35					40					45						
Ser	Met	Gly	Trp	Lys	Leu	Asn	Gln	Trp	Ala	Arg	Leu	Gln	Asp	Gly	Asn		
	50				55						60						
His	Ala	Tyr	Lys	Leu	Phe	Gly	Asn	Leu	Leu	Lys	Asn	Gly	Thr	Leu	Asp		
65				70					75					80			
Asn	Leu	Trp	Asp	Thr	His	Pro	Pro	Phe	Gln	Ile	Asp	Gly	Asn	Phe	Gly		
		85					90						95				
Gly	Thr	Ala	Gly	Ile	Thr	Glu	Met	Leu	Leu	Gln	Ser	His	Met	Gly	Phe		
	100					105						110					
Ile	Gln	Leu	Pro	Ala	Leu	Pro	Asp	Ala	Trp	Lys	Asp	Gly	Ser	Ile			
	115				120						125						
Ser	Gly	Ile	Cys	Ala	Lys	Gly	Asn	Phe	Glu	Val	Asp	Leu	Ser	Trp	Lys		
	130				135						140						
Asn	Gly	Gln	Leu	Ala	Glu	Ala	Thr	Ile	Phe	Ser	Lys	Ala	Gly	Glu	Pro		
145					150					155					160		

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65  
66  
67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82  
83  
84  
85  
86  
87  
88  
89  
90  
91  
92  
93  
94  
95  
96  
97  
98  
99  
100

Cys Thr Val Arg Tyr Gly Asp Lys Thr Leu Ser Phe Lys Thr Ser Lys  
                           165                          170                          175  
 Gly Lys Val Tyr Lys Leu Ala Leu Asp Ala Asp Arg Leu Val Ile Lys  
                           180                          185                          190

<210> 6798  
 <211> 89  
 <212> PRT  
 <213> B.fragilis

<400> 6798  
 Arg Lys Arg Thr Asn Gln Lys Val Arg Ser Tyr Ile Lys Ala Asp Leu  
 1                          5                          10                          15  
 Ser Leu Phe Ser Lys Phe Arg Glu Asn Leu Ile Thr Phe Gly Gln Thr  
                           20                          25                          30  
 Asn Leu Ile Asn Lys Ser Ala Trp Phe Arg Lys Glu Gln Glu Lys Asn  
                           35                          40                          45  
 Asp Ile His Thr Val Thr Ser Asn Asn Tyr Ala Tyr Glu Val Glu Lys  
                           50                          55                          60  
 Thr Asn Pro Leu Gln Thr Leu Phe Arg Lys Gln Asn Lys Ile Arg Asn  
 65                          70                          75                          80  
 Pro Lys Thr Asn Tyr Gln Ile Asn Val  
                           85

<210> 6799  
 <211> 62  
 <212> PRT  
 <213> B.fragilis

<400> 6799  
 Pro Phe Ala Asn Arg Glu Arg Leu Ile Phe Leu Pro Pro Ser Ser Glu  
 1                          5                          10                          15  
 Ala Ala Arg Phe Ile His Tyr Leu Leu Leu Phe Asn Lys Ile Val Val  
                           20                          25                          30  
 Gln Arg Ala Val Ile Lys Lys Ile Ile Ile Ile Asn Ser Cys Ile Leu  
                           35                          40                          45  
 Leu Lys Val Ile Ala Ser Leu Pro Arg Asp Ile Val Ile Leu  
                           50                          55                          60

<210> 6800  
 <211> 95  
 <212> PRT  
 <213> B.fragilis

<400> 6800  
 Phe Tyr Gln Ile Lys Ile Ser Pro Glu Glu Lys Tyr Phe Phe Arg Gly  
 1                          5                          10                          15  
 Tyr Phe Cys Phe Ile Thr Gln Ser Ser Leu His Pro Glu Lys Tyr Ile  
                           20                          25                          30  
 His His Thr Glu Ile Ser Lys Pro Asn Val Thr Ala Ile Arg Ile Leu  
                           35                          40                          45  
 Leu Leu Thr Phe Tyr Tyr Leu Tyr Cys Lys Ile Gln Lys Val Ser Tyr  
                           50                          55                          60  
 Leu Thr Phe Trp Tyr Phe Ser Thr Pro Thr Phe Leu Asn Ile Asn Thr  
 65                          70                          75                          80  
 Ile Lys Gln Asn Arg Ile Glu Asn Arg Asn Glu Lys Thr Lys Pro  
                           85                          90                          95

<210> 6801

<211> 387  
 <212> PRT  
 <213> B.fragilis

<400> 6801

Asp	His	Thr	Ser	Arg	Ser	Leu	Glu	Lys	Ser	Leu	Leu	Tyr	Asp	Phe	Thr
1			5					10						15	
Asn	Ser	Gln	Lys	Thr	Val	Tyr	Met	Lys	Ile	Gly	Ile	Leu	Thr	Phe	His
		20						25				30			
Asp	Ala	His	Asn	Tyr	Gly	Ala	Met	Leu	Gln	Cys	Tyr	Ala	Leu	Gln	Gln
		35					40					45			
Phe	Leu	Phe	Lys	Lys	Gly	Tyr	Asn	Val	Glu	Val	Ile	Asp	Tyr	Arg	Pro
	50					55					60				
Ala	Phe	Tyr	Gln	Lys	Gln	Tyr	His	Arg	His	Ser	Leu	Cys	Pro	Trp	Ile
65					70					75					80
Gly	Lys	Asn	Pro	Val	Arg	Thr	Met	Lys	Ser	Ile	Tyr	Tyr	Asn	Tyr	Tyr
				85					90					95	
Leu	Phe	Asn	Lys	Arg	Cys	Ala	Ala	Phe	Ser	Asp	Phe	His	Asn	Arg	His
			100					105					110		
Leu	Tyr	Met	Ser	Ile	Pro	Ala	Thr	Arg	Thr	Asn	Ile	Pro	Gln	Ser	Tyr
		115					120						125		
Asp	Ala	Tyr	Ile	Val	Gly	Ser	Asp	Gln	Ile	Trp	Asn	Pro	Gln	Leu	Thr
	130					135					140				
Asn	Gly	Phe	His	Asp	Val	Tyr	Phe	Cys	Asp	Phe	Cys	Phe	Pro	Lys	Gly
145				150						155					160
Lys	Ser	Arg	Phe	Ile	Ala	Tyr	Ala	Pro	Ser	Met	Glu	Ile	Ser	Arg	Leu
				165						170					175
Ser	Thr	Gln	Glu	Ala	Glu	Tyr	Leu	Thr	Arg	Val	Leu	Asn	Cys	Phe	Asp
			180						185				190		
Ala	Leu	Ser	Val	Arg	Glu	Ser	Ser	Leu	Ile	Pro	Ile	Leu	Gln	Pro	Leu
		195					200						205		
Val	Ser	Gln	Pro	Ile	Gln	Gln	Val	Leu	Asp	Pro	Thr	Leu	Leu	Leu	Asp
	210					215						220			
Ala	Thr	Ala	Trp	Asn	Pro	Leu	Ile	Gly	Lys	Cys	Pro	Glu	Asn	Arg	Pro
225				230						235					240
Tyr	Val	Val	Leu	Tyr	Gln	Val	Arg	Glu	Asn	Pro	Ala	Val	Arg	Met	Lys
				245						250					255
Ala	Phe	Glu	Ile	Ala	Gln	Ser	Ile	Gly	Gly	Ile	Val	Val	Glu	Leu	Thr
			260					265						270	
Ala	Arg	Ile	Asp	Cys	His	Tyr	Ser	Thr	Lys	Tyr	Gln	Thr	Ala	Ser	Pro
		275						280					285		
Ala	Asp	Phe	Val	Thr	Tyr	Ile	Arg	Tyr	Ala	Thr	Tyr	Val	Val	Thr	Thr
	290					295						300			
Ser	Phe	His	Gly	Thr	Ala	Phe	Ser	Leu	Ile	Phe	Asn	Arg	Pro	Phe	Tyr
305					310					315					320
Thr	Phe	Ser	Leu	Gly	Asp	Asn	Phe	Asp	Ser	Arg	Ser	Ala	Ser	Leu	Leu
				325						330				335	
Glu	Ser	Val	Asn	Leu	Thr	Glu	Arg	Leu	Val	Cys	Pro	Asp	Glu	Gln	Phe
			340					345					350		
Glu	Ile	Ser	Leu	Ile	Asp	Phe	Lys	Gln	Ala	Asn	Lys	Arg	Leu	Lys	His
		355					360					365			
Leu	Arg	Lys	Gln	Ser	Cys	Asp	Phe	Leu	Arg	Gln	Ser	Leu	His	Glu	Arg
	370					375						380			
Gln	Glu	Gln													
385															

<210> 6802  
 <211> 799  
 <212> PRT



&lt;213&gt; B.fragilis

&lt;400&gt; 6802

```

Ile Tyr Leu Phe Pro Val Tyr His Ser Tyr Arg Met Lys Arg Cys Leu
1      5      10      15
Leu Tyr Ile Leu Cys Cys Phe Gly Val Val Gln Leu Ser Ala Gln Pro
20      25      30
Ala Asp Asn Ile Arg Asn Ser Phe Val Lys Ala Glu Thr Phe Tyr Lys
35      40      45
Ser Gly Asp Ile Asp Glu Ala Cys Arg Ile Leu Glu Glu Asn Leu Ser
50      55      60
Ser Phe Gln Gly Thr Met His Thr Glu Ala Cys Arg Leu Ala Ala Leu
65      70      75      80
Cys Cys Leu Ala Leu Asp Arg Phe Pro Glu Ala Glu Lys Tyr Val Ser
85      90      95
Leu Leu Leu Lys Asp Glu Pro Tyr Tyr Tyr Ile Ser Leu Gln Asp Pro
100     105     110
Glu Arg Phe Ala Asp Met Val Arg Lys His Arg Glu Thr Lys Val Thr
115     120     125
Leu Val Thr Ala Ser Gln Gln Val Glu Thr Pro Glu Glu Ala Pro Val
130     135     140
Pro Val Thr Leu Ile Thr Glu Glu Met Ile Arg Ala Ile His Ala Arg
145     150     155     160
Cys Leu Arg Asp Val Leu Ile Ala Tyr Val Pro Gly Ile Ser Gly Leu
165     170     175
Ser Ser Asn Glu Glu Met Asn Leu Ala Met Arg Gly Val Tyr Ser Pro
180     185     190
Glu Gln Glu Asn Ile Leu Ile Met Gln Asp Gly Gln Arg Leu Asn Ser
195     200     205
Tyr Ile Thr Asn Ala Val Ser Pro Asp Tyr Gly Ile Ser Leu Ala Lys
210     215     220
Val Lys Gln Ile Glu Val Leu Arg Gly Pro Ala Ser Ser Leu Tyr Gly
225     230     235     240
Ser Val Ala Leu Thr Ala Val Ile Asn Ile Val Thr Lys Asp Gly Val
245     250     255
Asp Val Arg Asn Gly Ser Ile Ser Val Ser Ala Gly Asn Arg Gly Gln
260     265     270
Leu Ala Ala Asp Leu Leu Leu Gly Lys His Asp Met Asn Met Asp Phe
275     280     285
Met Ala Trp Phe Ser Leu Tyr Arg Ala Thr Gly Glu Ser Val Phe Val
290     295     300
Pro Ala Glu Lys Gln Tyr Ala Leu Tyr Pro Arg Asp Gly Phe Ile Arg
305     310     315     320
Leu Asp Asn Tyr Ser Gly Phe Pro Ala Met Asp Gly Gly Ile Lys Leu
325     330     335
Gln Arg Gly Asn Leu Leu Phe Ser Phe Ser Met Asn Tyr Ala Lys Lys
340     345     350
Arg Gln Pro Tyr Ser Met Trp Leu Phe Ser Ser Pro Tyr Ser Tyr Glu
355     360     365
Arg Phe Arg Thr Phe Asp Gly Ser Gly Pro Gly Tyr Ser Arg Trp Ser
370     375     380
Ala Arg Glu Gln Ala Val Tyr Ser Arg Thr Trp Gln Arg Ile Thr Phe
385     390     395     400
Ser Thr Ala Phe Tyr Thr Asp Trp Asn Lys Asn Val His Tyr Glu Thr
405     410     415
Ser Gly Asp Thr Leu Gln Asp Tyr Pro Ile Phe Pro Asn Tyr Asp Tyr
420     425     430
Gln Pro Ile Ile Tyr Pro Thr Arg Gly Ala Phe Gln Tyr Ile Arg Trp
435     440     445

```

Met Asp Phe Asn Val Gly Phe Asn Gly Arg Val Asn Tyr Ala Tyr Asp  
 450 455 460  
 Trp Gly Lys Leu Gly Lys Gly Asn Met Leu Gly Gly Val Glu Trp Asn  
 465 470 475 480  
 Arg Tyr Thr Leu Tyr Asp Ser Glu Tyr Leu Glu Gly Met Asn Phe Lys  
 485 490 495  
 Glu Ile Val Arg Thr Trp Ile Glu Lys Arg Leu Tyr Thr Gly His Glu  
 500 505 510  
 Met Asn Thr Asp Ala Phe Leu Gln Ile Lys His Asn Leu His Lys Asn  
 515 520 525  
 Trp Ile Val Asn Ala Gly Ile Arg Tyr Asp Tyr Lys Arg Arg Ser Asn  
 530 535 540  
 Lys Arg Thr Leu Gln Ala Phe Ser Pro Arg Leu Ser Leu Ile Tyr Leu  
 545 550 555 560  
 Arg Asn Gly Leu Asn Ile Lys Ala Ser Tyr Ser Arg Ala Phe Val Asp  
 565 570 575  
 Ala Pro Tyr Tyr Tyr Arg Asn Asn Glu Met Asp Thr Tyr Ser Gly Gly  
 580 585 590  
 Glu Asn Leu Gln Ala Glu Tyr Leu Ser Ser Tyr Gln Val Thr Cys Ala  
 595 600 605  
 Tyr His His Ser Pro Ser His Ile Asp Val Glu Cys Asn Leu Phe Tyr  
 610 615 620  
 Asn Arg Ala Ser His Phe Leu Phe Thr Gln Pro Glu Thr Arg Val Tyr  
 625 630 635 640  
 Glu Asn Ala Gly Ser Leu Asp Met Gly Gly Val Glu Val Val Ala Arg  
 645 650 655  
 Tyr Lys Ala Asp Arg Leu Ser Leu Asp Gly Asn Leu Cys Phe Gln Lys  
 660 665 670  
 Val Leu Asn Tyr Thr Asn Phe Phe Val Thr Asp Gly Ser Val Asn Asn  
 675 680 685  
 Val Pro Gly Phe Ser Met Asn Leu Val Ala Asn Tyr Phe Leu Leu Lys  
 690 695 700  
 Lys Lys Val Gln Ser Trp Ser Ala His Leu Lys Leu Asn Cys Ser Ser  
 705 710 715 720  
 His Cys Tyr Thr Gln Ile Ser Val Leu Glu Asp Gly Leu Asn Gly Asp  
 725 730 735  
 Ala Thr Asn Tyr Thr Val Arg Leu Pro Gly Tyr Ala Val Phe Ser Phe  
 740 745 750  
 Thr Thr Arg Tyr Lys Tyr Lys Arg Ile Glu Gly Ser Leu Gly Ile Glu  
 755 760 765  
 Asn Leu Phe Asn Asn Arg Tyr Glu Cys Gly Gly Ala Thr Val Pro Ile  
 770 775 780  
 Arg Gln Lys Gly Arg Trp Ile Ser Ala Ser Ile Leu Tyr Asn Phe  
 785 790 795

&lt;210&gt; 6803

&lt;211&gt; 67

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6803

Leu Gln Phe Pro Ser Pro Glu Gly Lys Glu Asp Ser Val Pro Leu Pro  
 1 5 10 15  
 Ile Pro Gly Tyr Ala Phe Asn Thr Met Ala His Asn Tyr Pro Gly Leu  
 20 25 30  
 Ala Asp Ile Leu Lys Arg Leu Gly Ile Asn Glu Val Asn Glu Val Asn  
 35 40 45  
 Ala Ile Leu Arg Leu Pro Asp Tyr Glu Arg Lys Gly Thr Val Gln Pro  
 50 55 60

Leu Phe Ser  
65

<210> 6804  
<211> 954  
<212> PRT  
<213> B.fragilis

<400> 6804

Ile	Leu	Leu	Pro	Lys	Asn	Val	Ser	Ala	Met	Lys	Lys	Ile	Val	Phe	Leu
1				5					10					15	
Ile	Met	Cys	Leu	Cys	Ser	Val	Tyr	Ala	Asn	Ser	Gln	Glu	Gly	Ile	Pro
			20					25					30		
Phe	Phe	Val	Asn	Tyr	Pro	Ala	Ser	Val	Tyr	Gln	Ala	His	Asn	Arg	Asn
		35				40					45				
Phe	Asp	Val	Val	Cys	Asp	Ser	Cys	Gly	Asn	Val	Tyr	Phe	Ala	Asn	Phe
	50				55					60					
Glu	Gly	Ile	Leu	His	Tyr	Asp	Tyr	Asn	Arg	Trp	Glu	Thr	Ile	Tyr	Thr
65				70					75					80	
Pro	Gly	Phe	Ser	Arg	Val	Thr	Arg	Leu	Phe	Arg	Asp	Ser	Glu	Gly	Arg
			85					90						95	
Ile	Trp	Val	Gly	Gly	Tyr	Asn	Val	Phe	Gly	Arg	Ile	Glu	Arg	Asp	Gly
		100						105					110		
Arg	Gly	Cys	Ile	Thr	Leu	Arg	Thr	Leu	Leu	Ser	Asp	Leu	Asp	Thr	Asp
		115				120						125			
Ser	Leu	Gly	Glu	Leu	Glu	Asp	Met	Ala	Glu	Ile	Asp	Lys	Arg	Ile	Tyr
	130					135					140				
Leu	Lys	Ala	Thr	Ser	Gly	Arg	Tyr	Tyr	Thr	Val	Gln	Ser	Asp	Ser	Ile
145				150						155				160	
Leu	Thr	Pro	Val	Gln	Val	Leu	Pro	Ala	Gln	Leu	Gln	Glu	Lys	Trp	Arg
			165					170						175	
Asn	Gln	Ser	Ser	Val	Ser	Met	Asn	Arg	Ala	Phe	Ser	Leu	Pro	Gly	Gly
		180					185						190		
Glu	Thr	Ile	Ser	Ile	Asn	Ser	Ala	His	Gly	Leu	Ile	Met	Asp	Asp	Ser
	195					200						205			
Gly	Lys	Lys	Glu	Arg	Phe	Ser	Val	Thr	Glu	Arg	Asn	Gly	Leu	Cys	Ser
	210				215						220				
Asn	Ala	Val	Ser	Gly	Ile	Ala	Ala	Asp	Gly	Arg	Gly	Asn	Leu	Trp	Gly
225				230					235					240	
Ala	Thr	Asp	Asn	Gly	Val	Phe	His	Val	Phe	Ile	Pro	Ser	Leu	Phe	Ser
			245					250						255	
Arg	Tyr	Thr	Ser	Gly	Glu	Gly	Leu	Lys	Gly	Glu	Val	Ile	Ser	Ala	Val
		260					265						270		
Ser	Tyr	Lys	Gly	Met	Ile	Tyr	Thr	Gly	Thr	Leu	Gln	Gly	Leu	Tyr	Val
	275					280						285			
Leu	Lys	Gln	Asn	Thr	Phe	Val	Pro	Val	Gln	Gly	Ile	Ser	Gln	Ala	Cys
	290				295						300				
Trp	Arg	Leu	Cys	Leu	Ser	Pro	Gln	Gly	Glu	Leu	Tyr	Ala	Ala	Ser	Gly
305				310						315				320	
Asp	Gly	Val	Tyr	Val	Ile	Arg	Asp	Tyr	Asn	His	Ser	Glu	Lys	Leu	Thr
			325						330					335	
Asp	Met	Ala	Ala	Tyr	Ser	Leu	Ala	Phe	Ile	Gly	His	Thr	Asn	Leu	Leu
		340						345					350		
Met	Gly	Thr	Met	Asp	Gly	Ile	Tyr	Gln	Tyr	Ser	Ala	Asp	Glu	Glu	Arg
	355					360						365			
Ile	Lys	Lys	Ile	Ser	Asp	Val	Glu	Lys	Val	Val	Arg	Leu	Glu	Val	Lys
	370				375						380				
Lys	Asp	Arg	Ser	Val	Trp	Ala	Lys	Thr	Leu	Tyr	Gly	Glu	Ile	Tyr	Leu
385					390					395					400

Arg	Glu	Glu	Gly	Glu	Ser	Ser	Phe	Val	Leu	Gln	Asp	Arg	Glu	Ser	Glu
				405					410					415	
Glu	Val	Met	Thr	Glu	Tyr	Thr	Asp	Asn	Asp	Gly	Cys	His	Trp	Gln	Thr
				420				425					430		
Asn	Leu	Lys	Gly	Lys	Glu	Val	Gln	Val	His	His	Ser	Gln	Ile	Asp	Thr
				435			440					445			
Glu	Lys	Phe	Asn	Gln	Cys	Leu	Tyr	Ala	Ile	Arg	Asn	Tyr	Val	Val	Arg
				450			455				460				
Val	Ile	Tyr	Ile	Glu	Glu	Asp	Arg	Ala	Ala	Trp	Phe	Gly	Gly	Asp	Phe
465					470					475					480
Gly	Leu	Ile	Arg	Met	Asp	Leu	Glu	Lys	Ala	Arg	Thr	Phe	Thr	Pro	Val
				485				490						495	
Ala	Pro	Arg	Ile	Tyr	Leu	Arg	Glu	Ile	Cys	Leu	Asn	Arg	Asp	Ser	Val
				500				505					510		
Tyr	Trp	Gly	Gly	Asp	Leu	Pro	Glu	Glu	Ser	Gly	Gly	Ala	Asp	Trp	Gln
				515			520					525			
Ile	Asn	Ser	Thr	Ala	Pro	Arg	Leu	Gly	Asn	Asp	Val	Arg	Ser	Ile	Arg
						535					540				
Phe	Ser	Phe	Ala	Thr	Asp	Ala	Pro	Cys	Phe	Thr	Gly	Ser	Asn	Glu	Tyr
545					550					555					560
Arg	Tyr	Arg	Leu	Val	Gly	Tyr	Asp	Pro	Glu	Trp	Ser	Ser	Trp	Asp	Pro
				565					570					575	
Gly	Thr	Val	Lys	Glu	Tyr	Ala	Asn	Leu	Ser	Ser	Gly	Thr	Tyr	Thr	Phe
				580				585					590		
Cys	Val	Arg	Ala	Arg	Asp	Ile	Tyr	Gly	Thr	Glu	Ser	Glu	Met	Asn	Gln
				595			600					605			
Phe	Arg	Phe	Ser	Leu	Leu	Pro	Pro	Phe	Tyr	Leu	Gln	Trp	Tyr	Cys	Leu
				610			615				620				
Ile	Leu	Tyr	Ala	Val	Ala	Phe	Gly	Met	Leu	Leu	Phe	Leu	Leu	Phe	Lys
625					630					635					640
Trp	Arg	Met	Arg	Ser	Leu	Leu	Lys	Glu	Lys	Glu	Arg	Leu	Glu	Ala	Leu
				645					650					655	
Val	Gly	Gln	Arg	Thr	Lys	Gln	Leu	Val	His	Gln	Lys	Asn	Glu	Ile	Glu
				660				665					670		
Glu	Lys	Ser	Leu	Lys	Leu	Glu	Lys	Ala	Leu	Lys	Glu	Leu	Gly	Gln	Ala
				675			680					685			
Gln	Asp	Glu	Leu	Val	Arg	Gln	Glu	Lys	Met	Ala	Thr	Val	Gly	Lys	Leu
				690			695				700				
Thr	Gln	Gly	Leu	Ile	Asp	Arg	Ile	Leu	Asn	Pro	Leu	Asn	Tyr	Ile	Asn
705					710					715					720
Asn	Phe	Ser	His	Leu	Thr	Ser	Gly	Leu	Leu	Lys	Asp	Leu	Tyr	Gln	Asn
				725						730				735	
Leu	Glu	Ser	Val	Lys	Glu	Leu	Leu	Asp	Glu	Asp	Thr	Tyr	Leu	Asp	Ser
				740				745					750		
Val	Asp	Val													

865		870		875		880
Ile Arg Leu Tyr Asp Asn Gly Val Gly Ile Glu Gln Ser Ile Leu Asp						
	885		890		895	
Lys Ile Phe Asp Pro Phe Phe Thr Thr Lys Thr Thr Gly Glu Ala Ala						
	900		905		910	
Gly Ile Gly Leu Tyr Leu Ser Lys Glu Ile Ile Leu Asn His His Gly						
	915		920		925	
Gln Ile Ala Val Arg Ser Glu Lys Asp Glu Leu Thr Glu Phe Thr Ile						
	930		935		940	
Thr Leu Pro Leu Trp Glu Glu Lys Ser Val						
945	950					

<210> 6805  
 <211> 343  
 <212> PRT  
 <213> B.fragilis

<400> 6805	
Ser Met Ile Pro Lys Val Ser Val Ile Val Pro Ile Tyr Asn Val Glu	
1	15
Lys Tyr Leu Asp Gln Cys Val Gln Ala Leu Leu Ala Gln Thr Leu Ser	
	30
Asp Ile Glu Ile Ile Leu Ile Asp Asp Glu Ser Pro Asp Asn Cys Pro	
	45
Lys Ile Cys Asp Asp Tyr Ala Ala Gln Tyr Pro Asn Ile Lys Val Ile	
	60
His Lys Lys Asn Ala Gly Leu Gly Met Ala Cys Asn Ser Gly Leu Asp	
65	80
Val Ala Thr Gly Glu Tyr Val Ala Phe Cys Asp Ser Asp Asp Tyr Val	
	95
Asp Ser Asp Met Tyr Met Thr Met Tyr Asn Val Ala Gln Lys Tyr Thr	
	110
Cys Asp Ala Val Phe Thr Gly Leu Lys Arg Ile Thr Met Ala Gly Ile	
	125
Pro Thr Gly Thr Val Thr His Gln Lys Glu Phe Lys Leu Tyr Lys Asn	
	140
Lys Asn Glu Ile His Thr Leu Leu Lys Asp Leu Ile Ala Ser Asp Pro	
145	160
Tyr Ala Arg Glu Glu Arg Ala Ile Gln Val Ser Ala Lys Val Val Leu	
	175
Tyr Arg Arg Asn Leu Ile Glu Lys Lys His Leu Arg Phe Val Ser Glu	
	190
Arg Ile Leu Pro Ser Glu Asp Leu Ile Phe Asn Val Asp Val Leu Ala	
	205
Asn Ser Asn Ile Val Cys Val Leu Pro Gln Thr Phe Tyr Asn Tyr Arg	
	220
Thr Asn Pro Ile Ser Ile Ser His Thr Ile Lys Lys Asp Lys Phe Ser	
225	240
Leu Phe Lys Gln Leu Tyr Ile Glu Ile Thr Asp Arg Cys His Arg Leu	
	255
Gly Val Glu Asp Asn Val Gln Leu Arg Ile Gln Arg Met Phe Leu Gly	
	270
Tyr Thr Arg Asn Tyr Ile Cys Asn Ile Leu Asn Ser Ser Ile Thr Asn	
	285
Ile Glu Lys Lys Gln Ile Thr Ser Ser Ile Cys Lys Asp Gly Ile Trp	
	300
Lys Pro Ile Trp Lys Thr Tyr Pro Leu Ser Val Met Pro Leu Pro His	
305	320
Arg Ile Phe Thr Phe Ala Met Arg His Asn Phe Tyr Ser Leu Leu Leu	

Val Leu Ala Lys Ile Lys Lys  
340

330

335

<210> 6806  
<211> 76  
<212> PRT  
<213> B.fragilis

<400> 6806  
Lys Lys Glu Pro Glu Ala Phe Ile Gln Ile Asn Tyr Ala Asp Ser Tyr  
1 5 10 15  
Leu Arg Phe Ser Leu Ile Cys Tyr Gly Pro Gly Asn Lys Gly Gln Gln  
20 25 30  
Asn Ile Ala Lys Gln Asn Ser Asn Arg Ser Ala Arg Ile Lys Thr Glu  
35 40 45  
Lys Arg Ser Ala Pro Leu Pro Leu Arg Gln Thr Arg Ser Leu Pro Arg  
50 55 60  
Tyr Cys Trp Pro Cys Asn Ile Ala Ile His Asp Phe  
65 70 75

<210> 6807  
<211> 143  
<212> PRT  
<213> B.fragilis

<400> 6807  
Ala Met Thr Leu Leu Gln Phe Arg Pro Val Asp Gly Arg Leu Asp Glu  
1 5 10 15  
Ile Leu Ser Met Leu Met His Ser Arg Glu Val Ala Ser His Pro Ser  
20 25 30  
Leu Ser Tyr Ala Ile Arg Leu Val Ser Glu Glu Ile Ile Val Asn Ile  
35 40 45  
Leu Asn Tyr Ala Tyr Pro Gln Gln Ala Glu Gly Tyr Leu Thr Leu Cys  
50 55 60  
Leu Trp Asp Glu Asp Gly Glu Ile Thr Leu Glu Phe Ile Asp Gly Gly  
65 70 75 80  
Ile Pro Phe Asn Pro Leu Asp Lys Ala Asp Pro Asp Ile Ser Leu Pro  
85 90 95  
Leu Glu Gln Arg Glu Ile Gly Gly Leu Gly Ile Phe Leu Val Arg Glu  
100 105 110  
Met Met Asp Asp Val Ala Tyr Thr Tyr Val Asn Lys Glu Asn Arg Leu  
115 120 125  
Thr Ile Lys Lys Lys Tyr Leu Gln Pro Thr Asp Glu Pro Val Ser  
130 135 140

<210> 6808  
<211> 516  
<212> PRT  
<213> B.fragilis

<400> 6808  
Tyr His Met Pro Ser Asp Ser Gln Asn Asn Lys Arg Ile Ala Gln Asn  
1 5 10 15  
Thr Leu Leu Leu Tyr Phe Arg Met Leu Phe Leu Met Leu Val Ser Leu  
20 25 30  
Tyr Thr Ser Arg Val Asn Leu Asn Ala Leu Gly Ile Glu Asp Phe Gly  
35 40 45  
Ile Tyr Asn Val Val Gly Gly Leu Val Ala Met Phe Ser Ile Ile Ser

50	55	60
Gly Ser Leu Val Ser Ser Ile Ser Arg Phe Ile Thr Phe Glu Leu Gly		
65	70	75
Thr Glu Asn Lys Glu Lys Leu Lys Lys Val Phe Ser Thr Ala Val Ser		80
	85	90
Ile Gln Phe Phe Leu Val Ile Ile Val Val Ile Leu Ala Glu Thr Ile		95
	100	105
Gly Leu Trp Phe Leu Asn Asn Lys Met Val Ile Pro Glu Glu Arg Ile		110
	115	120
Leu Ala Ala Asn Ile Ile Tyr Gln Phe Ser Ile Ile Ser Phe Ala Leu		125
	130	135
Ser Leu Met Ser Ile Pro Tyr Thr Gly Thr Ile Val Ala His Glu Lys		140
145	150	155
Met Ser Ala Phe Ala Tyr Ile Ser Ile Phe Asp Val Ile Gly Lys Leu		160
	165	170
Ala Val Ala Leu Thr Ile Ser Ile Ala Pro Ile Asp Lys Leu Ile Trp		175
	180	185
Phe Ala Gly Phe Ile Val Phe Asn Ser Thr Ile Ile Gln Ser Ile Tyr		190
	195	200
Ile Phe Tyr Cys Lys Arg His Phe Glu Glu Cys Thr Tyr His Phe Ile		205
	210	215
Phe Asp Lys Ser Leu Leu Lys Asn Met Phe Gly Phe Ala Gly Trp Asn		220
225	230	235
Phe Ile Gly Ser Ile Ala Ala Ile Leu Arg Asp Gln Gly Gly Asn Ile		240
	245	250
Val Ile Asn Met Phe Cys Gly Pro Ala Val Asn Ala Ala Arg Gly Val		255
	260	265
Ala Met Gln Val Asn Asn Ala Val Ser Gly Phe Val Ser Asn Phe Gln		270
	275	280
Thr Ala Leu Asn Pro Gln Ile Thr Lys Ser Tyr Ala Ser Gly Asn Tyr		285
	290	295
Asp Tyr Met Met Gln Leu Ile Phe Gln Gly Ala Arg Leu Ser Tyr Tyr		300
305	310	315
Ile Leu Leu Ile Leu Ala Leu Pro Ile Ile Ser Asn Thr His Phe Ile		320
	325	330
Leu Gln Leu Trp Leu Gly Gln Val Pro Lys His Thr Val Leu Phe Val		335
	340	345
Gln Leu Val Leu Phe Phe Thr Met Ser Glu Ser Leu Ala Asn Pro Leu		350
	355	360
Ile Asn Ala Met Leu Ala Thr Gly Lys Ile Lys Lys Phe Gln Ile Ile		365
	370	375
Val Gly Gly Leu Asn Leu Val Asn Leu Pro Leu Ser Tyr Ile Cys Leu		380
385	390	395
Arg Leu Gly Cys Ile Pro Glu Ser Val Val Ile Ile Ala Ile Ile Ile		400
	405	410
Ser Met Ile Cys Glu Met Ala Arg Val Ile Met Leu Arg Asn Met Ile		415
	420	425
His Phe Pro Ala Arg Ser Phe Leu Lys Lys Val Tyr Phe Asn Val Ile		430
	435	440
Phe Val Thr Ile Thr Ala Ser Ile Leu Pro Leu Tyr Leu His Phe Ile		445
	450	455
Leu Glu Glu Asn Ile Tyr Thr Phe Thr Leu Ile Ser Val Val Ser Phe		460
465	470	475
Ser Cys Thr Leu Leu Ser Ile Leu Tyr Ile Gly Cys Ser Ser Glu Glu		480
	485	490
Arg Val Met Val Phe Ser Lys Val Lys Val Ile Val Asn Lys Val Ser		495
	500	505
Lys Arg Tyr Lys		510
515		

<210> 6809  
 <211> 150  
 <212> PRT  
 <213> B.fragilis

<400> 6809

Ser Gln Phe Thr His Thr Asn His Met Thr Ile Ala Val Asp Phe Asp  
 1 5 10 15  
 Gly Thr Ile Val Glu His Arg Tyr Pro Lys Ile Gly Glu Glu Ile Pro  
 20 25 30  
 Phe Ala Thr Glu Thr Leu Lys Ile Leu Ala Gln Glu Arg His Lys Leu  
 35 40 45  
 Ile Leu Trp Thr Val Arg Glu Gly Glu Leu Leu Glu Glu Ala Ile Glu  
 50 55 60  
 Trp Cys Arg Gln Arg Gly Val Phe Phe Tyr Ser Val Asn Lys Asp Tyr  
 65 70 75 80  
 Pro Glu Glu Glu Lys Ser His Asn Gly Phe Ser Arg Lys Leu Lys Ala  
 85 90 95  
 Asp Leu Phe Ile Asp Asp Arg Asn Leu Gly Gly Leu Pro Asp Trp Gly  
 100 105 110  
 Thr Ile Tyr Gln Met Ile His Glu Gln Lys Pro Tyr Glu Pro Val Leu  
 115 120 125  
 Cys Asp Arg Gln Lys Pro Thr Gly Asp Leu Ser Trp Ile Glu Lys Leu  
 130 135 140  
 Leu Gly Lys Arg Asn Lys  
 145 150

<210> 6810  
 <211> 354  
 <212> PRT  
 <213> B.fragilis

<400> 6810

Arg Lys Arg Leu Thr Met Asn Asn His Val Val Ile Met Ala Gly Gly  
 1 5 10 15  
 Ile Gly Ser Arg Phe Trp Pro Met Ser Thr Pro Glu Cys Pro Lys Gln  
 20 25 30  
 Phe Ile Asp Ile Leu Gly Cys Gly Lys Thr Leu Ile Gln Leu Thr Val  
 35 40 45  
 Glu Arg Phe Gly Asn Val Cys Pro Gln Glu Asn Met Trp Val Val Thr  
 50 55 60  
 Ser Glu Lys Tyr Ile Asp Thr Ile Arg Glu Gln Leu Pro Gly Ile Pro  
 65 70 75 80  
 Glu Ser Asn Ile Leu Ala Glu Pro Cys Pro Arg Asn Thr Ala Pro Cys  
 85 90 95  
 Ile Ala Tyr Ala Cys Trp Lys Ile Lys Lys Lys Tyr Pro Glu Ala Asn  
 100 105 110  
 Ile Val Val Thr Pro Ser Asp Gln Val Val Ile Asp Thr Thr Glu Phe  
 115 120 125  
 Arg Arg Val Ile Glu Lys Ala Leu Leu Phe Thr Asp Lys Ser Ser Ala  
 130 135 140  
 Ile Ile Thr Leu Gly Ile Lys Pro Ala Arg Pro Glu Thr Gly Tyr Gly  
 145 150 155 160  
 Tyr Ile Ala Ala Gly Glu Pro Ile Thr Arg Asp Lys Glu Ile Phe His  
 165 170 175  
 Val Glu Ala Phe Lys Glu Lys Pro Asp Lys Glu Thr Ala Glu Lys Tyr  
 180 185 190  
 Leu Ala Ala Gly Asn Tyr Phe Trp Asn Ala Gly Ile Phe Val Trp Asn



195	200	205
Val Arg Thr Ile Thr Ala	Val Met Arg Val Tyr Ala	Pro Gly Ile Ala
210	215	220
Gln Ile Phe Asp Arg Ile Tyr Pro Asp Phe Tyr Thr Glu Arg Glu Glu		
225	230	235
Glu Ser Val Lys Lys Leu Phe Pro Thr Ala Glu Ser Ile Ser Ile Asp		240
	245	250
Tyr Ala Val Met Glu Lys Ala Glu Glu Ile Tyr Val Leu Pro Ala Gln		255
	260	265
Met Gly Trp Ser Asp Leu Gly Thr Trp Gly Ala Leu His Thr Leu Leu		270
	275	280
Pro Lys Asp Lys Glu Gly Asn Ala Thr Val Gly Pro Asp Ile Arg Met		285
	290	295
Tyr Glu Ser Gln Asn Cys Met Val His Ala Ser Gln Glu Lys Arg Val		300
305	310	315
Val Ile Gln Gly Leu Asn Asp Tyr Ile Ile Ala Glu Lys Asp Asn Ile		320
	325	330
Leu Leu Ile Cys Gln Leu Ser Glu Glu Gln Arg Ile Lys Asp Phe Ser		335
	340	345
		350
Lys Glu		

&lt;210&gt; 6811

&lt;211&gt; 369

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6811

Tyr Asn Thr Thr Met Thr Asn Ile Leu Gly Leu Lys Gln Asn Arg Trp	
1	5
Ile Val Gly Ala Val Leu Leu Leu Thr Thr Cys Asn Leu Gln Ala Gln	10
	15
	20
Glu Gln Pro Asn Ala Arg Glu Lys Phe Glu Arg Gly Asn Trp Phe Val	25
	30
	35
Ser Gly Ala Leu Asn Gly Glu Trp Leu Thr Lys Thr Ile Gly Asn Val	40
	45
	50
Tyr Ala Gly Gly Lys Ile Ser Gly Gly Val Tyr Leu Thr Pro Leu Ser	55
65	60
	65
Gly Phe Arg Ala Thr Ala Glu Ile Gly Lys Asn Trp Ile Gly Asn Asp	70
	75
	80
	85
Thr Glu Ala Thr Gln Leu Ser Ala Asn Leu Asp Tyr Met Leu Thr Leu	90
	95
	100
Ile Gly Asn Asn Gly Phe Lys Arg Phe Asn Leu Ala Ala Ile Leu Gly	105
	110
	115
Ala Gly Phe Asn Tyr Tyr Asp Phe Gly Asp Asn Asp Pro Lys Tyr Thr	120
	125
	130
Arg Val Asn Thr Ile Ser Gly Asn Phe Ser Ile Gln Ala Ser Tyr Asn	135
145	140
	145
Val Asn Arg Lys Phe Ser Ile Phe Ile Glu Pro Gly Leu Lys Val Leu	150
	155
	160
	165
Pro Lys Tyr Tyr Ser Lys Glu Leu Asn Asn Lys Ile Tyr Met Gln Ser	170
	175
	180
Asn Leu Thr Ile Gly Leu Ala Tyr Thr Phe Arg Asp Lys Tyr Arg Lys	185
	190
	195
Ser Val Asp Asn Ser Ile His Pro Leu Tyr Leu Pro Glu Ala Asp Leu	200
210	205
	210
Leu Glu Ile Lys Glu Lys Ile Gly Met Leu Cys Glu Glu Val Met Gln	215
225	220
	225
Met Lys Gln Glu Leu Lys Glu Arg Arg Lys Ile Thr Asp Gly Gln Asn	230
	235
	240

245 250 255  
 Leu Met Ile Val Pro Gln Lys Asp Ala Leu Ser Ile Asp Ile Met Phe  
 260 265 270  
 Asp Glu Phe Ser Ser Phe Val Ser Glu Glu Gln Gly Gln Lys Ile Asp  
 275 280 285  
 Gly Ile Gly Glu Trp Met Lys Asn Asn Asn Ala Ser Ile Arg Ile Ile  
 290 295 300  
 Ala Phe Ser Asp Asn Leu Thr Asp Lys Lys Ala Asp Gln Glu Leu Arg  
 305 310 315 320  
 Lys Arg Arg Ser Glu Ala Ile Arg Lys Ile Leu Ile Glu Lys Tyr His  
 325 330 335  
 Ile Ser Pro Glu Arg Ile Ser Glu Ser Thr Pro Glu Ala Met Gly Tyr  
 340 345 350  
 Glu Asn Lys Thr Gly Cys Asn Ala Met Ile Val Tyr Ile Pro Glu Asn  
 355 360 365  
 Lys

<210> 6812

<211> 583

<212> PRT

<213> B.fragilis

<400> 6812

Arg Arg Glu Thr Thr Tyr Lys Leu Lys Glu Thr Thr Phe Lys Tyr Met  
 1 5 10 15  
 Lys Lys Ser Ile Leu Phe Thr Phe Val Leu Cys Leu Leu Ser Gln Trp  
 20 25 30  
 Ser Val Ala Gln Asp Pro Lys Trp Val Glu Lys Ala Lys Arg Ser Val  
 35 40 45  
 Phe Ser Ile Val Thr Tyr Asp Lys Asp Asp Lys Ile Gln Asn Thr Gly  
 50 55 60  
 Asn Gly Phe Phe Val Thr Glu Asp Gly Val Ala Leu Ser Asp Tyr Ser  
 65 70 75 80  
 Leu Phe Lys Gly Ala Gln Arg Ala Val Ile Ile Asn Ser Glu Gly Glu  
 85 90 95  
 Lys Met Pro Val Glu Cys Ile Leu Gly Ala Asn Asp Met Tyr Asp Ile  
 100 105 110  
 Ile Lys Phe Arg Val Gly Ile Thr Val Lys Lys Val Pro Ala Leu Gln  
 115 120 125  
 Val Ala Ala Leu Ala Pro Ala Val Gly Ala Glu Val Tyr Leu Leu Pro  
 130 135 140  
 Tyr Ser Thr Gln Lys Gly Gly Asn Val Thr Arg Gly Lys Val Lys Lys  
 145 150 155 160  
 Val Asp Asn Ile Gly Gly Asp Lys Tyr His Tyr Tyr Thr Leu Asp Met  
 165 170 175  
 Val Leu Lys Asp Lys Met Val Ser Cys Pro Val Thr Thr Ala Asp Gly  
 180 185 190  
 Lys Val Phe Gly Val Ala Gln Lys Ser Ser Gly Gln Asp Thr Ala Ser  
 195 200 205  
 Ile Ser Tyr Ala Ala Gly Ala Ala Phe Ala Met Ser Gln Asn Ile Ser  
 210 215 220  
 Ala Leu Ala Leu Ser Asp Pro Ala Leu Asn Ala Ile Gly Ile Lys Lys  
 225 230 235 240  
 Gly Leu Pro Glu Asp Glu Asp Gln Ala Leu Val Tyr Leu Phe Ile Ala  
 245 250 255  
 Ser Thr Gln Ser Thr Pro Glu Ala Tyr Ala Ile Ala Leu Asp Asp Phe  
 260 265 270  
 Ile Lys Thr Phe Pro Asn Ser Ala Asp Gly Tyr Leu Arg Arg Ala Gly

275 280 285  
 Asn Tyr Val Phe Ala Asp Lys Asp Glu Asn His Met Asp Lys Ala Ala  
 290 295 300  
 Ala Asp Leu Glu His Ala Leu Lys Val Ala Gln Lys Lys Asp Asp Thr  
 305 310 315 320  
 Tyr Tyr Asn Ile Ala Lys Leu Ile Tyr Asn Tyr Gln Leu Ser Lys Pro  
 325 330 335  
 Glu Thr Val Tyr Lys Asp Trp Thr Tyr Asp Lys Ala Leu Glu Asn Val  
 340 345 350  
 Arg Ser Ala Ile Ala Ile Gln Ser Leu Pro Val Tyr Gln Gln Leu Glu  
 355 360 365  
 Gly Asp Ile Leu Phe Ala Lys Gln Asp Tyr Ala Gly Ala Phe Ala Ser  
 370 375 380  
 Tyr Asp Lys Val Asn Gln Thr Glu Leu Ala Ser Pro Ala Ser Phe Phe  
 385 390 395 400  
 Ser Ala Ala Lys Ala Lys Glu Leu Ser Lys Ala Ala Pro Glu Glu Val  
 405 410 415  
 Ile Ala Leu Leu Asp Ser Cys Ile Ala Arg Cys Gln Thr Pro Ile Thr  
 420 425 430  
 Ser Asp Leu Ala Pro Tyr Leu Leu Glu Arg Ala Gln Met Tyr Met Asn  
 435 440 445  
 Val Glu Lys Tyr Arg Leu Ala Leu Ala Asp Tyr Asp Ala Tyr Phe Asn  
 450 455 460  
 Ala Val Lys Gly Ser Val Asn Asp Leu Phe Tyr Tyr Tyr Arg Glu Gln  
 465 470 475 480  
 Ala Ala Phe Lys Ala Lys Gln Phe Gln Arg Ala Leu Asp Asp Ile Ala  
 485 490 495  
 Lys Ala Ile Glu Leu Asn Pro Glu Asp Leu Thr Tyr Arg Ala Glu Gln  
 500 505 510  
 Ala Val Val Asn Leu Arg Val Gly Arg Tyr Glu Glu Ala Glu Lys Val  
 515 520 525  
 Leu Lys Asp Ala Leu Ala Ile Asp Pro Lys Tyr Ala Glu Gly Tyr Arg  
 530 535 540  
 Leu Leu Gly Ile Cys Gln Ile Gln Leu Lys Gln Glu Lys Ala Ala Cys  
 545 550 555 560  
 Ala Ser Phe Ala Lys Ala Lys Glu Leu Gly Asp Pro Asn Val Asp Glu  
 565 570 575  
 Leu Ile Lys Lys His Cys Lys  
 580

<210> 6813  
 <211> 105  
 <212> PRT  
 <213> B.fragilis

<400> 6813  
 Asn Lys Arg Thr Met Glu Lys Tyr Glu Ile His Phe Val Gly Ser Val  
 1 5 10 15  
 Leu Asp Ser Asn Thr Ser Gly Asp Glu Gln Ala Lys Ile Val Ala Leu  
 20 25 30  
 Ile Glu Gln Gly His Ser Val Ala Leu Asp Leu Ser Gly Cys Ser Tyr  
 35 40 45  
 Val Ser Ser Ala Gly Leu Arg Val Met Leu Tyr Ala Phe Lys Leu Ala  
 50 55 60  
 Lys Ala Lys Ser Arg Asp Val Cys Leu Val Gly Val Ser Gln Glu Val  
 65 70 75 80  
 Lys Asp Val Met His Met Thr Gly Phe Asp Lys Phe Phe Arg Phe Tyr  
 85 90 95  
 Gln Thr Leu Asp Glu Leu Ser Gln Pro

100

105

<210> 6814  
 <211> 647  
 <212> PRT  
 <213> B.fragilis

<400> 6814

Cys	Ile	Phe	Ala	Pro	Pro	Lys	Thr	Lys	Thr	Val	Lys	Gln	Met	Lys	Gln
1				5					10					15	
Asn	Phe	Phe	His	Arg	Tyr	Leu	Ser	Ala	Lys	Val	Leu	Pro	Ile	Trp	Thr
			20					25					30		
Ile	Leu	Leu	Ile	Asp	Ile	Phe	Ile	Ile	Val	Ala	Ser	Cys	Leu	Leu	Ala
		35					40					45			
Tyr	Ser	Leu	Arg	Tyr	Asp	Phe	Arg	Ser	Ile	Phe	Leu	Asp	Ser	Ser	Thr
	50					55					60				
Ile	Asp	Lys	Thr	Ile	Leu	Trp	Thr	Val	Val	Ala	Asn	Leu	Ile	Phe	Phe
65					70					75					80
Arg	Val	Phe	Arg	Thr	Tyr	Ser	Asn	Val	Leu	Arg	Phe	Ser	Ser	Phe	Val
				85					90					95	
Asp	Ile	Met	Arg	Ile	Phe	Val	Ser	Leu	Thr	Val	Ser	Tyr	Gly	Val	Leu
			100					105					110		
Met	Ile	Leu	Ser	Leu	Leu	Leu	Asp	Ala	Tyr	Leu	Gly	Ile	Arg	Ile	Gly
		115					120					125			
Ala	Ile	Ser	Val	Leu	Phe	Met	Ala	Tyr	Val	Ile	Asn	Phe	Ala	Met	Met
	130					135					140				
Ala	Cys	Ser	Arg	Ile	Val	Val	Lys	Met	Phe	Phe	Glu	Val	Leu	Asn	Phe
145					150					155					160
Asp	Gly	Ser	His	Thr	Thr	Asn	Val	Phe	Ile	Tyr	Gly	Ala	Lys	Glu	Ala
				165					170					175	
Gly	Val	Asn	Ile	Ala	Lys	Ser	Leu	Arg	Val	Asn	Leu	Arg	Asn	His	Tyr
		180						185					190		
Arg	Leu	Arg	Gly	Phe	Ile	Ala	Asp	Glu	Pro	Glu	Leu	Ile	Gly	Lys	Val
		195					200					205			
Met	Met	Gly	Ala	Lys	Val	Phe	Pro	Asn	Asp	Glu	Ala	Leu	Ile	Glu	Asn
	210					215					220				
Met	Asn	Asp	Arg	Asp	Val	His	Thr	Ile	Ile	Val	Ser	Pro	Ala	Lys	Met
225					230					235					240
Glu	Lys	Leu	Lys	Lys	Ser	Asp	Met	Ile	Asp	Thr	Leu	Leu	Ser	Asn	Asn
				245					250					255	
Val	Lys	Leu	Leu	Thr	Ala	Pro	Pro	Leu	Ser	Glu	Trp	Gly	Gly	Gln	Ala
		260						265					270		
Leu	Asn	Lys	Thr	Gln	Leu	Lys	Glu	Ile	Gln	Ile	Glu	Asp	Leu	Leu	Gln
		275					280					285			
Arg	Glu	Pro	Ile	Glu	Val	Asp	Ile	His	Lys	Ile	Ala	Ser	His	Leu	Glu
	290					295					300				
Gly	Lys	Arg	Val	Met	Ile	Thr	Gly	Ala	Ala	Gly	Ser	Ile	Gly	Ser	Glu
305					310					315					320
Ile	Met	Arg	Gln	Val	Ala	Ser	Phe	Asn	Pro	Tyr	Lys	Leu	Ile	Leu	Ile
			325						330					335	
Asp	Gln	Ala	Glu	Thr	Pro	Leu	His	Asp	Ile	Arg	Leu	Glu	Leu	Gln	Asp
		340						345					350		
Arg	Trp	Arg	Asp	Ile	Asp	Ala	Glu	Thr	Ile	Val	Ala	Asp	Ile	Ser	Asn
		355					360					365			
Ala	Thr	Arg	Met	Glu	Ala	Ile	Phe	Arg	Glu	Tyr	Lys	Pro	Gln	Tyr	Ile
	370					375						380			
Phe	His	Ala	Ala	Ala	Tyr	Lys	His	Val	Pro	Met	Met	Glu	Asp	Asn	Val
385					390					395					400
Ser	Glu	Ser	Ile	Gln	Ile	Asn	Val	Ser	Gly	Thr	Arg	Thr	Leu	Ala	Asp

405 410 415  
 Leu Ala Val Lys Phe Gly Ser Glu Lys Phe Val Met Ile Ser Thr Asp  
 420 425 430  
 Lys Ala Val Asn Pro Thr Asn Val Met Gly Cys Ser Lys Arg Ile Cys  
 435 440 445  
 Glu Ile Tyr Val Gln Ser Leu Ala Lys Lys Leu Gln Lys Glu Gly Thr  
 450 455 460  
 Arg Ser Val Gln Phe Ile Thr Thr Arg Phe Gly Asn Val Leu Gly Ser  
 465 470 475 480  
 Asn Gly Ser Val Ile Pro Arg Phe Arg Asp Gln Ile Gln Arg Gly Gly  
 485 490 495  
 Pro Val Thr Val Thr His Pro Glu Ile Ile Arg Tyr Phe Met Thr Ile  
 500 505 510  
 Pro Glu Ala Cys Arg Leu Val Leu Glu Ala Gly Ser Met Gly Asn Gly  
 515 520 525  
 Gly Glu Ile Tyr Ile Phe Asp Met Gly Lys Pro Val Lys Ile Val Asp  
 530 535 540  
 Leu Ala Lys Arg Met Ile Ser Leu Ser Gly Arg Thr Asp Val Lys Ile  
 545 550 555 560  
 Glu Phe Thr Gly Leu Arg His Gly Glu Lys Leu Tyr Glu Glu Leu Leu  
 565 570 575  
 Asn Val Lys Glu Leu Thr Lys Pro Thr Tyr His Glu Lys Ile Met Ile  
 580 585 590  
 Ala Thr Val Arg Glu Tyr Asp Tyr Asp Glu Val Lys Glu Arg Ile Gln  
 595 600 605  
 Lys Leu Ile Asp Val Ser Tyr Thr Tyr Asp Gln Met Lys Ile Val Ala  
 610 615 620  
 Ala Met Lys Asp Ile Val Pro Glu Phe Val Ser Lys Asn Ser Cys Phe  
 625 630 635 640  
 Glu Ala Leu Asp Lys Lys Asp  
 645

<210> 6815  
 <211> 383  
 <212> PRT  
 <213> B.fragilis

<400> 6815

Thr Leu His Ala Thr Ser Thr Ser Phe Phe Tyr Tyr Thr Asn Gln Ser  
 1 5 10 15  
 Val Thr Leu Val Phe Leu Gln Asp Ala Phe Asp Thr Leu Leu Gly Lys  
 20 25 30  
 Lys Gln Thr Leu His Asp Gly Pro Cys Ala Leu Asn Ile Pro Phe Asn  
 35 40 45  
 Leu Lys Ala Leu Ile Phe Met Ser Ser Pro Lys Ile Ser Ile Ile Ile  
 50 55 60  
 Pro Val Tyr Met Ala Glu Ser Tyr Leu His Arg Cys Val Asp Ser Ile  
 65 70 75 80  
 Ile Thr Gln Thr Phe Thr Asp Trp Glu Leu Leu Val Asp Asp Gly  
 85 90 95  
 Ser Pro Asp His Ser Gly Glu Leu Cys Glu Lys Tyr Ala Ser Ala Tyr  
 100 105 110  
 Lys Ser Arg Ile Lys Ala Phe His Lys Pro Asn Gly Gly Val Ala Ser  
 115 120 125  
 Ala Arg Glu Phe Gly Met Gln Gln Ala Arg Gly Glu Tyr Ser Ile His  
 130 135 140  
 Val Asp Pro Asp Asp Trp Ile Asp Ser Asn Thr Leu Glu Glu Leu Tyr  
 145 150 155 160  
 Gln Gln Ala Val Lys Glu Gln Ala Asp Met Val Ile Cys Asp Phe Met

165 170 175  
 Met Glu Tyr Pro Asn Arg Gln Ile His Asn Cys Gln Lys Pro Gln Leu  
 180 185 190  
 Leu Asp Ser Ser Ser Phe Met His Gln Leu Leu Gln Gln Glu Arg His  
 195 200 205  
 Gly Ser Leu Cys Asn Lys Leu Ile Arg Thr Glu Leu Tyr His Lys Tyr  
 210 215 220  
 Gln Leu His Phe Pro Glu Lys Met Ile Cys Trp Glu Asp Leu Tyr Ile  
 225 230 235 240  
 Cys Cys Ser Ile Leu Leu His Gly Cys Lys Leu Ala Tyr Val Pro His  
 245 250 255  
 Ala Leu Tyr His Tyr Asp Phe Tyr Thr Asn Asp Asn Ser Met Val Arg  
 260 265 270  
 His Thr Asp Met Arg Gly Leu Gln Ala Gln Ile Asp Phe Cys Arg Leu  
 275 280 285  
 Met Gln Ala Lys Ile Ser Pro Glu Tyr Leu Pro Glu Leu Asn Glu Leu  
 290 295 300  
 Lys Gly Ile Thr Leu Ile Thr Ala Phe Arg Asn Gln Leu Leu Asn Glu  
 305 310 315 320  
 Gln Ala Ile Arg Ser Leu Phe Pro Glu Ile Asn Asp Trp Tyr Val Thr  
 325 330 335  
 Arg Tyr Gly His Asp Tyr Glu Lys Ser Asn Tyr Tyr Gly Leu Thr Leu  
 340 345 350  
 Val Leu Arg Gly Tyr Asn Phe Lys Thr Ala Arg Arg Arg Met Phe Val  
 355 360 365  
 Ala Lys Phe Leu Val Gln Ile Lys Asn Lys Ile Thr Arg Met Leu  
 370 375 380

&lt;210&gt; 6816

&lt;211&gt; 549

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6816

Thr Thr Asn Ala Met Lys Leu Arg Thr Ile Val Lys Ile Ala Val Ile  
 1 5 10 15  
 Ser Ser Val Val Leu Leu Cys Thr Gly Phe Ala Met Phe Ser Phe Phe  
 20 25 30  
 Arg Leu Ser Ala Ala Glu Gly Arg Lys Asp Phe Asn Leu Tyr Thr Leu  
 35 40 45  
 Val Pro Gly Ser Ala Thr Val Val Leu Glu Thr Asp Asp Leu Ala Gly  
 50 55 60  
 Met Ile Gln Gly Ile Asn Glu Leu Ser Cys Ser Lys Asp Arg His Phe  
 65 70 75 80  
 Leu Tyr Val Ser Lys Leu Phe Ser Tyr Leu Lys Leu His Leu Tyr Thr  
 85 90 95  
 Leu Leu Glu Asp Thr Pro His Gly Leu Ser Lys Gln Met Asn Lys Val  
 100 105 110  
 Leu Leu Ser Phe His Glu Pro Asp Asn Asp Arg Asn Gln Val Leu Tyr  
 115 120 125  
 Cys Ser Leu Gly Asn Gly Asp Tyr Glu Leu Val Glu Lys Phe Ile Arg  
 130 135 140  
 Lys Tyr Cys Ser Ser Ser Phe Pro Ser Lys Leu Phe Asp Tyr Lys Gly  
 145 150 155 160  
 Glu Glu Ile Arg Ile Tyr Pro Met Pro Asp Asp Ser Phe Leu Ala Cys  
 165 170 175  
 Tyr Phe Thr Ser Asp Phe Leu Val Val Ser Tyr Gln Lys Lys Leu Ile  
 180 185 190  
 Glu Gln Val Ile Asp Ala Arg Leu Ser Lys Lys Ser Leu Leu Thr Asp

```
<210> 6817
<211> 67
<212> PRT
<213> B.fragilis
```

<400> 6817															
Ile	Phe	His	Phe	Lys	Val	Glu	Ile	Gly	Asp	Leu	Asp	Glu	Ile	Val	Phe
1				5					10					15	
Lys	Glu	Ile	Phe	Gly	Leu	Asp	Leu	Glu	Ser	Gln	Val	Val	Glu	Tyr	Gly
			20					25					30		
His	Lys	Lys	Cys	Ser	Ser	Asp	His	Ala	Trp	Pro	Glu	Glu	His	Thr	Gln
		35					40					45			
Thr	Lys	Gln	Ile	Lys	Ala	Val	Thr	Ile	Arg	Ile	Gly	Thr	Pro	Leu	His

50  
Pro Val Leu  
65

55

60

<210> 6818  
<211> 490  
<212> PRT  
<213> B.fragilis

<220>  
<221> UNSURE  
<222> (49)  
<223> Identity of amino acid sequences at the above locations are unknown.

<400> 6818

Lys	Lys	His	Tyr	Arg	Leu	Val	Ile	Ser	Met	Phe	Leu	Ser	Gly	Gly	Arg
1				5					10					15	
Thr	Leu	Ser	Trp	Arg	Val	Arg	Gly	Gln	Lys	Ser	Lys	Gly	His	Ser	Met
			20					25					30		
Leu	Ser	Glu	Gly	Glu	Ser	Glu	Glu	Asp	Met	Glu	Asp	Val	Leu	Phe	
		35				40					45				
Xaa	Asn	Pro	Glu	Gln	Phe	Arg	Arg	Val	Ala	Pro	Tyr	Phe	Pro	Glu	Glu
	50					55					60				
Val	Phe	Glu	His	Leu	Pro	Asp	Leu	Leu	Ala	Gln	Gly	Val	Lys	Ala	Ala
65				70					75					80	
Gly	Asn	Tyr	Arg	Glu	Arg	Asp	Met	Leu	Leu	Met	Ala	Met	Ile	Thr	Asn
				85				90					95		
Ile	Ser	Ala	Cys	Leu	Pro	Glu	Val	Arg	Val	Leu	Tyr	Asp	Gln	Val	Tyr
			100					105					110		
Tyr	Ser	Pro	His	Leu	Tyr	Tyr	Met	Val	Ile	Ala	His	Ala	Gly	Gly	Gly
		115					120					125			
Lys	Gly	Val	Val	Ser	Leu	Ala	Gly	Leu	Leu	Pro	Gly	Glu	Ile	His	Arg
	130					135					140				
Tyr	Tyr	Glu	Lys	Gln	Asn	Glu	Glu	Met	Arg	Leu	Val	Tyr	Asp	Lys	Ala
145				150					155					160	
Phe	Phe	Glu	Trp	Glu	Leu	Glu	Leu	Lys	Lys	Ala	Gln	Ala	Glu	Lys	Arg
			165					170					175		
Ser	Pro	Asp	Phe	Ser	Leu	Arg	Pro	Lys	Glu	Pro	Val	Arg	Lys	Leu	Leu
		180						185					190		
Thr	Leu	Ser	Pro	Asn	Val	Ser	Lys	Ser	Met	Leu	Ile	Ser	Ala	Leu	Glu
		195					200					205			
Glu	Ser	Gly	Lys	Leu	Gly	Cys	Cys	Ile	Asn	Ala	Thr	Glu	Leu	Asp	Met
	210				215						220				
Val	Ser	Gly	Ala	Ile	Arg	Asn	Asp	Tyr	Gly	Lys	His	Asp	Asp	Val	Phe
225				230						235				240	
Arg	Ala	Ala	Phe	Gln	His	Glu	Val	Val	Ser	Ala	Asp	Phe	Lys	Val	Asn
			245						250				255		
Gly	Arg	Gln	Val	Val	Ala	His	Asn	Pro	His	Leu	Ala	Leu	Cys	Leu	Ala
		260					265					270			
Gly	Thr	Pro	Asn	Gln	Leu	Val	Arg	Phe	Ile	Pro	Ser	Leu	Glu	Asn	Gly
	275						280					285			
Leu	Tyr	Ser	Arg	Phe	Leu	Val	Tyr	Thr	Gly	Gln	Ser	Asp	Trp	Cys	Trp
	290					295					300				
Arg	Ser	Ala	Ala	Pro	Arg	Glu	Gly	Gly	Glu	Asp	His	Arg	Ala	Met	Phe
305				310					315					320	
Ala	Arg	Leu	Ser	Gly	Arg	Leu	Leu	Glu	Leu	His	Gln	Phe	Leu	Leu	Gln
			325					330					335		
Ser	Pro	Thr	Glu	Val	Thr	Phe	Thr	Ala	Ala	Gln	Trp	Glu	Glu	His	Thr
			340					345					350		



Ser Arg Phe Ser Ser His Leu Ser Glu Val Val Asn Glu Arg Asp Asp  
 355 360 365  
 Ser Pro Gly Ala Ile Val Leu Arg His Gly Leu Met Ala Ser Arg Ile  
 370 375 380  
 Ala Gly Val Leu Thr Ala Leu Arg Lys Gly Glu Cys Ala Trp Ala Met  
 385 390 395 400  
 Pro Gln Tyr Val Cys Ser Asp Glu Asp Phe His Thr Ala Met Leu Met  
 405 410 415  
 Thr Asp Val Leu Leu Glu His Ser Leu Leu Ser Thr Ser Val Arg  
 420 425 430  
 Lys Ser Glu Ser Lys Ser Gly Pro Leu Lys Pro Tyr Phe Arg Leu Arg  
 435 440 445  
 Pro Val Leu Gln Thr Phe Ser Gly Thr Phe Thr Leu Tyr Asp Ala Met  
 450 455 460  
 Asp Arg Ala Val Glu Met Gly Ile Ser Val Pro Thr Phe Asn Cys Leu  
 465 470 475 480  
 Phe Met Arg Thr Ile Glu Leu Lys Asn Asn  
 485 490

&lt;210&gt; 6819

&lt;211&gt; 459

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6819

Asn Met Asn Tyr Gln Glu Thr Leu Asp Tyr Leu Tyr Asn Ser Val Pro  
 1 5 10 15  
 Met Phe Gln Gln Val Gly Ser Ser Ala Tyr Lys Glu Gly Leu Glu Asn  
 20 25 30  
 Thr Tyr Ala Leu Asp Glu Tyr Leu Gly His Pro His Thr Ala Phe Gln  
 35 40 45  
 Ser Ile His Ile Ala Gly Thr Asn Gly Lys Gly Ser Cys Ser His Thr  
 50 55 60  
 Leu Ala Ala Ile Leu Gln Ser Ala Gly Tyr Arg Val Gly Leu Tyr Thr  
 65 70 75 80  
 Ser Pro His Leu Val Asp Phe Arg Glu Arg Ile Arg Ile Asn Gly Glu  
 85 90 95  
 Pro Ile Pro Gln Glu Tyr Val Ile Arg Phe Val Glu Asp His Arg Leu  
 100 105 110  
 Phe Phe Glu Pro Leu His Pro Ser Phe Phe Glu Leu Thr Thr Ala Met  
 115 120 125  
 Ala Phe Arg Tyr Phe Ala Asp Gln His Ile Asp Val Ala Val Ile Glu  
 130 135 140  
 Val Gly Leu Gly Gly Arg Leu Asp Cys Thr Asn Ile Ile Arg Pro Asp  
 145 150 155 160  
 Leu Ser Ile Ile Thr Asn Ile Ser Phe Asp His Met Gln Phe Leu Gly  
 165 170 175  
 Asn Thr Leu Ala Gln Ile Ala Thr Glu Lys Ala Gly Ile Ile Lys Arg  
 180 185 190  
 Gly Ile Pro Val Val Val Gly Glu Thr Thr Glu Glu Thr Lys Pro Val  
 195 200 205  
 Phe Tyr Arg Lys Ala Gln Glu Met Glu Ala Pro Val Thr Phe Ala Glu  
 210 215 220  
 Glu Glu Gln Arg Leu Lys Gly Ala Thr Lys Phe Lys Thr Arg Ala Asp  
 225 230 235 240  
 Arg Lys Pro Gly Gln Tyr Thr Asp His Gln Pro Asn Thr Ala Ala Glu  
 245 250 255  
 Lys Asp Thr Glu Tyr Ile Thr Gly Trp Ile Tyr Glu Asn Asp Val Tyr  
 260 265 270

Pro Gly Leu Glu Gly Val Leu Gly Gly Ser Tyr Gln Leu Lys Asn Thr  
 275 280 285  
 Asn Thr Leu Leu Ser Ala Leu Pro Val Leu Lys Ser Leu Gly Tyr Lys  
 290 295 300  
 Ile Glu Asp His Asp Val Arg Asn Gly Phe Leu Gln Val Asp Lys Met  
 305 310 315 320  
 Thr Gly Leu Gln Gly Arg Trp Gln Lys Leu Ser Asp Ser Pro Thr Val  
 325 330 335  
 Ile Cys Asp Thr Gly His Asn Val Ala Gly Ile Ser Tyr Ile Val Glu  
 340 345 350  
 Gln Leu Lys Gln Met Lys Tyr Asn Cys Leu His Met Val Ile Gly Met  
 355 360 365  
 Val Asn Asp Lys Asp Val Ser Gly Ile Leu Ser Ile Leu Pro Glu Asn  
 370 375 380  
 Ala Val Tyr Tyr Phe Thr Lys Ala Ser Val Lys Arg Ala Leu Pro Glu  
 385 390 395 400  
 Ala Gln Leu Gln Gln Ile Gly Ala Ser Ala Gly Leu Gln Gly Lys Ala  
 405 410 415  
 Tyr Pro Asp Val Gln Ser Ala Val Lys Ala Ala Gln Glu Lys Ser Leu  
 420 425 430  
 Pro Glu Asp Leu Ile Phe Val Gly Ser Ser Phe Ile Val Ala Asp  
 435 440 445  
 Leu Leu Ser Cys Arg Asp Ala Leu Asp Leu Asp  
 450 455

<210> 6820  
 <211> 88  
 <212> PRT  
 <213> B.fragilis

<400> 6820  
 Asn Thr Ser Leu Arg Asn Lys Met Ile Ile Ala Ser Gly Glu Gln Ala  
 1 5 10 15  
 Ser Gln Phe Val His His Ser Phe Leu Ile His Ser Ser Leu Leu Ile  
 20 25 30  
 Gln Ile Leu Leu Arg Trp Phe Lys Gly Tyr Asn Cys Pro Thr Lys Ile  
 35 40 45  
 Ser Gly Lys Pro Leu Leu Ile Phe Tyr His Ile Asp Ser Ala His Lys  
 50 55 60  
 Gln Asp His Tyr Asn Val Trp Gln Thr Leu Pro Ser Leu Trp Leu Ala  
 65 70 75 80  
 Lys Arg Lys Ala Phe Arg Ile Val  
 85

<210> 6821  
 <211> 354  
 <212> PRT  
 <213> B.fragilis

<400> 6821  
 Thr Lys Tyr Gln Asn Ala Ile Asn Asn Met Ser Leu Val Asn Asn Phe  
 1 5 10 15  
 Thr Val Lys Lys Val Arg Ser Ser Asn Leu Glu Ser Leu Arg Leu Leu  
 20 25 30  
 Ser Met Phe Phe Val Leu Val Val His Ala Asp Phe Gln Ala Leu Gly  
 35 40 45  
 Met Pro Asp Arg Thr Glu Met Thr Ile Leu Pro Leu Phe Ser Val Phe  
 50 55 60  
 Arg Ile Ile Ile Glu Ala Phe Ala Ile Val Cys Val Asn Ser Phe Val

65	70	75	80
Leu Leu Ser Gly Trp	Phe Gly Ile Asn	Phe His Ile Lys Ser	Leu Cys
	85	90	95
Asn Leu Leu Phe Gln Cys Ala Phe	Phe Leu Ile Gly Ile Tyr	Thr Phe	
	100	105	110
Thr Ile Leu Ile Gly Ile Glu Pro	Leu Ser Ile Ser Gly	Ile Lys Arg	
	115	120	125
Cys Leu Met Leu Thr Asn Asn Val Trp	Phe Val Lys Cys Tyr	Leu Gly	
	130	135	140
Met Phe Ile Met Ala Pro Ile Leu Asn Ala	Phe Val Glu Lys Thr	Asp	
145	150	155	160
Lys Arg Thr Phe Ser Thr Val Leu Leu Ser	Phe Phe Ile Phe Gln Thr		
	165	170	175
Ile Tyr Gly Trp Phe Ser Asn Gly Ala Pro	Tyr Phe Glu Lys Gly Tyr		
	180	185	190
Ser Ala Phe Ser Phe Met Gly Leu Tyr	Leu Leu Ala Arg Tyr Val Arg		
	195	200	205
Ile Tyr Gln Pro Ser Tyr Thr Gln Trp	Ser Lys Ser Lys Asn Leu Leu		
	210	215	220
Met Tyr Ile Ser Leu Ser Thr Phe Thr Ala	Leu Met Leu Ile Ile Thr		
225	230	235	240
Cys Tyr Phe Asp Lys Val Gly Tyr Phe Cys	Met Phe Trp Thr Tyr Thr		
	245	250	255
Ser Pro Leu Val Ile Ala Gly Ala Leu Tyr	Leu Leu Leu Phe Phe Asn		
	260	265	270
Arg Phe Ala Phe Gln Asn Lys Gly Ile Asn	Trp Ile Ala Ala Ser Cys		
	275	280	285
Phe Ala Val Tyr Leu Phe His Phe Phe Ile	Trp Glu Tyr Phe Met Lys		
	290	295	300
Pro His Ile Gln Gln Leu Ala Val Thr Tyr	Asn Gly Ile Ser Cys Leu		
305	310	315	320
Leu Val Ile Thr Gly Leu Leu Leu Thr Phe	Phe Thr Ala Ala Ile Leu		
	325	330	335
Ile Asp Lys Ile Arg Leu Tyr Ile Trp	Asn His Phe Val Ser Lys Tyr		
	340	345	350
Ile Ser			

&lt;210&gt; 6822

&lt;211&gt; 421

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6822

Met Cys Leu Asn Pro Leu Ser Cys Met	Lys Lys Gln Leu Thr Ile Ile
1	5 10 15
Ile Gly Leu Leu Leu Ser Ser Ser	Ile Thr Val His Ala Gln Val Ala
	20 25 30
Gln Lys Leu Arg Glu Leu Gly Met Glu	Asn Ile Arg Thr Ile Glu Thr
	35 40 45
Gly Gly Thr Thr Val Ala Ala Phe Glu	Asp Asn Val Tyr Arg Gly Thr
	50 55 60
Tyr Arg Gly Val Gly Lys Ala Ile Ile	Ala Gly Met Glu Gly Met Gly
65	70 75 80
Asn Gly Asn Leu Glu Leu Val Ala Leu	Asp Gly Asn Gly Ile Pro Gln
	85 90 95
Leu Ser Ile Ser Leu Pro Asp Thr Leu	Ile Ala Gly Tyr Lys Ser Gly
	100 105 110
Gly Ile Ser Leu Lys Glu Val Tyr Glu	Arg Met Glu Met Ser Tyr Asp

115 120 125  
 Thr Asp Arg Pro Met Gly Leu Leu Lys Gly Ser Ala Gly Val Ile Asn  
 130 135 140  
 Arg Ser Ala Trp Lys Ala Asp Ile Val Leu Tyr Pro Glu Val Ser Leu  
 145 150 155 160  
 Glu Asn Ser Thr Phe Asp Lys Leu Tyr Ser Tyr Arg Val Asn Leu Ser  
 165 170 175  
 Pro Ala Val Glu Met Asp Leu Trp Lys Gly Ala Lys Ala Thr Ala Gln  
 180 185 190  
 Val Val Phe Pro Ile Ala Thr Asn Met Lys Gly Glu Tyr Lys Lys Ile  
 195 200 205  
 Arg Pro Gly Val Met Thr Ile Ser Gln Glu Ile Arg Phe Arg Asn Asn  
 210 215 220  
 Phe Leu Ala Arg Ile Val Ala Gly Asn Phe Thr Asp His Arg Ile Gly  
 225 230 235 240  
 Ala Gln Ala Glu Val Lys Tyr Arg Thr Gly Asn Gly Arg Val Glu Leu  
 245 250 255  
 Gly Ala Gln Ile Gly Thr Thr Gly Tyr Ser Ala Ile Thr Asp Asp Gly  
 260 265 270  
 Trp Tyr Ile Gly Thr Arg Gln Arg Ile Asn Ala Ala Val Lys Gly Ser  
 275 280 285  
 Leu Tyr Val Pro Gln Phe Asn Thr Gln Leu Asp Leu Gln Ala Gly Arg  
 290 295 300  
 Tyr Leu Tyr Gly Asp Tyr Gly Leu Arg Gly Asp Cys Thr Arg His Phe  
 305 310 315 320  
 Gly Glu Tyr Ala Val Gly Val Tyr Ala Met Tyr Val Glu Gly Glu Val  
 325 330 335  
 Asn Gly Gly Phe His Phe Ala Ile Pro Leu Pro Gly Lys Lys Trp Asn  
 340 345 350  
 Arg Asn His Ala Val Arg Met Lys Pro Ala Glu Phe Phe Ala Ala Glu  
 355 360 365  
 Tyr Ser Met Val Ser Trp Gly Glu Tyr Ala Asp Arg Lys Met Gly Tyr  
 370 375 380  
 Thr Tyr Gln Thr Arg Pro Ala Glu Asn Arg Ser Asn Gly Phe Phe Gln  
 385 390 395 400  
 Pro Glu Tyr Ile Arg His Phe Leu Ile Lys Ser Ile Glu Lys Glu Arg  
 405 410 415  
 Asn Lys Lys Gln Phe  
 420

&lt;210&gt; 6823

&lt;211&gt; 250

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6823

Arg Thr Tyr Asn Tyr Pro Phe His Leu Arg Asn Met Leu Lys Leu Lys  
 1 5 10 15  
 Thr Val Ser Leu Leu Lys His Arg Ser Asp Leu Ser Ile Leu Pro Glu  
 20 25 30  
 Gly Lys Leu Leu Ile Asn Thr Ile Asn Ala His Ser Tyr Asn Thr Ala  
 35 40 45  
 Leu Lys Asp Ala Gly Phe Ala Glu Ala Leu Leu Lys Gly Gly Ala Leu  
 50 55 60  
 Ile Pro Asp Gly Ala Ser Met Val Leu Ala Phe Arg Trp Leu Arg Lys  
 65 70 75 80  
 Glu Ser Ile Glu Arg Thr Ala Gly Trp Asp Leu Phe Glu Tyr Glu Met  
 85 90 95  
 Glu Arg Leu Asn Arg Lys Gly Gly Ile Cys Tyr Phe Leu Gly Ser Ser

[illegible]

<400> 6824

Ile	Lys	Asn	Asn	Trp	Asn	Met	Lys	Thr	Ile	Lys	Leu	Gly	Tyr	Glu	Gly
1				5					10					15	
Glu	Glu	Ala	Leu	Leu	Leu	Cys	Arg	Glu	Leu	Lys	Arg	Asn	Gly	Tyr	Ser
			20					25					30		
Val	Lys	Glu	Ser	Arg	Thr	Phe	Thr	Gln	Glu	Met	Lys	Glu	Ala	Val	Ile
		35					40					45			
Asp	Phe	Gln	Gln	Lys	Asn	Lys	Leu	Asp	Ala	Asp	Gly	Ile	Val	Gly	Tyr
	50					55				60					
Arg	Thr	Trp	Glu	Val	Leu	Phe	Phe	Thr	Gly	His	Pro	Ile	Thr	Glu	Arg
65				70					75					80	
Leu	Thr	Glu	Glu	Asp	Phe	Ile	Leu	Val	Ala	Arg	Leu	Leu	Asp	Val	Glu
				85				90						95	
Val	Ala	Ala	Leu	Lys	Ala	Val	Gln	Gln	Val	Glu	Thr	Gly	Gly	Arg	Gly
			100				105					110			
Gly	Phe	Phe	Ala	Pro	Gly	Lys	Pro	Ala	Ile	Leu	Phe	Glu	Gly	His	Ile
		115					120				125				
Phe	Trp	Asn	Gln	Leu	Lys	Lys	Arg	Asn	Ile	Asn	Pro	Glu	Ser	His	Val
	130					135				140					
Lys	Gly	Asn	Glu	Asn	Ile	Leu	Tyr	Pro	Lys	Trp	Glu	Lys	Gly	His	Tyr
145				150					155					160	
Lys	Gly	Gly	Met	Gly	Glu	Tyr	Asp	Arg	Leu	Glu	Gln	Ala	Arg	Lys	Ile
			165					170						175	
Asn	His	Glu	Ala	Ala	Asp	Ala	Ser	Ala	Ser	Trp	Gly	Met	Phe	Gln	Ile
			180					185					190		
Met	Gly	Phe	Asn	Tyr	Ala	Ala	Cys	Gly	Glu	Lys	Ser	Val	Asp	Ser	Phe
		195					200					205			
Val	Lys	Ala	Met	Cys	Met	Ser	Glu	Cys	Arg	Gln	Leu	Val	Leu	Ser	Ala
	210					215					220				
Arg	Phe	Ile	Lys	Gln	Ser	Gly	Met	Leu	Ser	Ala	Leu	Gln	Ala	Lys	Asp
225				230						235				240	
Trp	Ala	Glu	Phe	Ala	Lys	Arg	Tyr	Asn	Gly	Pro	Ala	Tyr	Glu	Gln	Asn
			245						250					255	
Gln	Tyr	Asp	Lys	Lys	Leu	Ala	Ala	Ala	Tyr	Gln	Lys	Phe	Ser		

260

265

270

<210> 6825  
 <211> 64  
 <212> PRT  
 <213> B.fragilis

<400> 6825  
 Arg Arg Ile Leu Val Leu Val Glu Glu Gln Asn Pro Leu Ser Pro Arg  
 1 5 10 15  
 Gly Arg Gly Ile Ala Val Thr Asp Ala Pro Phe Tyr Gly Asn Gly Thr  
 20 25 30  
 Ser Glu Arg Leu Phe Asn Ile Gly Leu Cys Leu Pro Ser Gly Pro Thr  
 35 40 45  
 Leu Thr Asp Glu Asp Ile Arg Arg Val Val Asp Thr Ile Arg Lys Met  
 50 55 60

<210> 6826  
 <211> 251  
 <212> PRT  
 <213> B.fragilis

<400> 6826  
 Asn Ala Asp Asn Tyr Met Ile Asp Lys Ser Glu Met Ile Phe Gly Val  
 1 5 10 15  
 Arg Ala Val Ile Glu Ala Ile Gln Ala Gly Lys Glu Ile Asp Lys Ile  
 20 25 30  
 Leu Val Lys Lys Asp Ile Gln Ser Asp Leu Ser Lys Glu Leu Phe Thr  
 35 40 45  
 Ala Leu Lys Gly Thr Leu Ile Pro Val Gln Arg Val Pro Val Glu Arg  
 50 55 60  
 Ile Asn Arg Ile Thr Arg Lys Asn His Gln Gly Val Val Ala Phe Ile  
 65 70 75 80  
 Ser Ser Val Thr Tyr Gln Lys Thr Glu Asp Leu Val Pro Phe Leu Phe  
 85 90 95  
 Glu Glu Gly Lys Asn Pro Phe Phe Val Met Leu Asp Gly Ile Thr Asp  
 100 105 110  
 Val Arg Asn Phe Gly Ala Ile Ala Arg Thr Cys Glu Cys Ala Gly Val  
 115 120 125  
 Asp Ala Val Ile Ile Pro Ala Lys Gly Ser Val Thr Val Asn Ala Asp  
 130 135 140  
 Ala Met Lys Thr Ser Ala Gly Ala Leu His Thr Leu Pro Val Cys Arg  
 145 150 155 160  
 Glu Gln Asn Leu Lys Thr Thr Leu Gln Tyr Leu Lys Asp Ser Gly Phe  
 165 170 175  
 Arg Ile Val Ala Ala Thr Glu Lys Gly Asp Tyr Asp Tyr Thr Lys Ala  
 180 185 190  
 Asp Tyr Thr Gly Pro Met Cys Ile Ile Met Gly Ala Glu Asp Thr Gly  
 195 200 205  
 Val Ser Tyr Asp Asn Leu Ala Leu Cys Asp Glu Trp Val Lys Ile Pro  
 210 215 220  
 Met Leu Gly Ser Ile Glu Ser Leu Asn Val Ser Val Ala Ala Gly Ile  
 225 230 235 240  
 Leu Ile Tyr Glu Gly Val Lys Gln Arg Thr Asn  
 245 250

<210> 6827  
 <211> 276  
 <212> PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6827

Asn Leu Lys Asn His Ile Met Ala Gln Leu Ser Ser Val Ile Gly Ser  
 1 5 10 15  
 Ile Leu Arg Asp Ile Val Ser Ala Gln His Glu Ala Asn Leu Tyr Ser  
 20 25 30  
 Leu Ser Leu Gly Asp Ser Tyr Gly Lys Asp Gly Lys Ala Lys Asp Phe  
 35 40 45  
 Gln Leu Pro Asn Val Met Val Ser Asp Met Glu Leu Asp Leu Lys Tyr  
 50 55 60  
 Gly Val Lys Ser Ala Ser Glu Ser Gln Gln Gln Phe Asn Ile Lys Tyr  
 65 70 75 80  
 Asp Lys Phe Arg Gln Phe Leu Lys Glu Leu Cys Glu Gln Val Ala Arg  
 85 90 95  
 Val Ala Ile Ser Ser Ala Val Thr Thr Val Met Thr Ser Asp Ile Glu  
 100 105 110  
 Arg Asn Glu Gly Glu Lys His Phe Phe Glu Arg Leu Lys Lys Glu Asn  
 115 120 125  
 Lys Leu His Gln Glu Phe Cys Thr Phe Leu Ser Arg Asn Met Arg Asn  
 130 135 140  
 Ser Phe Arg Asn Asn Leu Tyr Asp Ala Val Asp Ser Ser Asn Gly Ser  
 145 150 155 160  
 Val Asn Asn Asp Val Val Ile Ser Arg Leu Thr Asp Val Val Arg Lys  
 165 170 175  
 Lys Phe Leu Tyr Asp Thr Asp Leu Asp Asp Leu Phe Ala Gly Glu Asp  
 180 185 190  
 Gly Glu Lys Leu Arg Asp Thr Ala Glu Lys Asn Ile Ile Lys Ala Met  
 195 200 205  
 Glu Ala Ile Val Lys Lys Leu Ser Val Asp Ala Asn Phe Lys Ser Leu  
 210 215 220  
 His Ser Phe Pro Gln Leu Asp Val Ala Ile Thr Ala Asp Glu Leu Met  
 225 230 235 240  
 Asn Met Pro Glu Glu Ala Ile His Ser Phe Lys Ile Lys Phe Ser Pro  
 245 250 255  
 Arg Asn Tyr Ser Val Ser Gln Thr Asp Asp Asp Ser Leu Leu Glu Asp  
 260 265 270  
 Phe Val Met Arg  
 275

&lt;210&gt; 6828

&lt;211&gt; 178

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6828

Asn Gln Lys Asn Gly Leu Thr Thr Met Lys Leu Ser Lys Phe Leu Ser  
 1 5 10 15  
 Ser Arg Thr Gly Lys Arg Phe Tyr Asn Leu Cys Tyr Cys Trp Gly Ala  
 20 25 30  
 Cys Leu Val Ile Leu Gly Ala Val Phe Lys Ile Ala His Met Pro Tyr  
 35 40 45  
 Asp Asn Leu Phe Leu Met Ile Gly Leu Phe Thr Glu Val Phe Ile Phe  
 50 55 60  
 Phe Ile Ser Gly Phe Asp Glu Pro Ala Arg Glu Tyr Lys Trp Glu Arg  
 65 70 75 80  
 Val Phe Pro Leu Leu Asn Asp Lys Asn Ala Asn Ile Asn Pro His Thr  
 85 90 95  
 Gly Val Ser Asp Thr Leu Met Thr Glu Lys Tyr Ile Gln Gln Leu Lys

	100		105		110										
Arg	Leu	Glu	Asn	Asn	Val	Cys	Lys	Leu	Asn	Glu	Thr	Tyr	Glu	Ala	Gln
	115						120					125			
Ile	Lys	Gly	Met	Thr	Glu	His	Ala	Lys	Ser	Leu	Asn	Glu	Met	Asn	Ser
	130					135					140				
Glu	Glu	Leu	Lys	Lys	Glu	Thr	Glu	Lys	Met	Ala	Ala	Tyr	Ile	Glu	Leu
145					150				155						160
Leu	Asn	Lys	Gln	Tyr	Ser	Gln	Met	Leu	Asn	Ala	Met	Asn	Val	Lys	Thr
			165					170						175	

Gly Lys

<210> 6829  
 <211> 63  
 <212> PRT  
 <213> B.fragilis

<400> 6829

Leu	Trp	Lys	Lys	Asn	Asp	Lys	Phe	Lys	Ser	Pro	Asn	Glu	Leu	Leu	Lys
1				5					10					15	
Glu	Leu	Ser	Gly	Gln	Val	Phe	Ala	Leu	Val	Arg	Glu	Leu	Pro	Lys	Pro
			20					25					30		
Leu	Ser	Arg	Glu	Glu	Met	Arg	Glu	Leu	Lys	Arg	Leu	Cys	Arg	Phe	Leu
		35					40					45			
Asn	Asn	Thr	Val	Lys	Asp	Gln	Glu	Arg	Lys	Gln	Glu	Val	Arg	Lys	
	50					55					60				

<210> 6830  
 <211> 80  
 <212> PRT  
 <213> B.fragilis

<400> 6830

Lys	Thr	Arg	Lys	Arg	Leu	Arg	Arg	Phe	Pro	Arg	Asn	Ile	Gln	Val	Phe
1				5					10					15	
Ser	Ser	Lys	Leu	Leu	Ser	Leu	Phe	Gly	Lys	Gly	Leu	Arg	Val	Cys	His
			20					25					30		
Thr	Ile	Ile	Gly	Trp	Ser	Gly	Val	Phe	Glu	Gly	Gln	Lys	Ser	Lys	Gly
		35					40					45			
Lys	Leu	Tyr	Glu	Ser	Val	Ser	Gly	Lys	Pro	Arg	Gly	Val	Met	Ile	Tyr
	50					55					60				
Ile	Ser	Pro	Ser	Leu	Ser	Ile	Ile	Phe	Lys	Leu	Tyr	Ser	Pro	His	Glu
65					70					75					80

<210> 6831  
 <211> 201  
 <212> PRT  
 <213> B.fragilis

<400> 6831

Arg	Val	Gly	Lys	Asn	Asn	Lys	Lys	Tyr	Ile	Met	Asp	Glu	Lys	Leu	Leu
1				5					10					15	
Pro	Tyr	Phe	Glu	Asn	Val	Asn	Asp	Gly	Gly	Glu	Gln	Gly	Lys	Tyr	Leu
			20					25					30		
Lys	Glu	Phe	Gly	Asn	Glu	Glu	Thr	Gln	Gly	Gly	Ile	Cys	Leu	His	Leu
		35					40					45			
Ser	Ile	Thr	Trp	Leu	Tyr	Leu	Trp	His	Asn	Ser	Thr	Asn	Lys	Ala	Pro
	50					55					60				
Asn	Thr	Ile	Trp	Gln	Glu	Met	Lys	Thr	Pro	Thr	Leu	Ile	Gln	Gln	Ile



65		70		75		80									
Ala	Ser	Asn	Gln	Arg	Ser	Tyr	Gln	Gln	Tyr	Tyr	Pro	Asn	Ile	Ala	Asp
				85					90					95	
Asn	Val	Ser	Leu	Ala	Thr	Arg	Asn	Ser	Leu	His	Val	Thr	Gly	Thr	Asn
			100					105					110		
Ala	Gly	Glu	Ile	Tyr	Gln	Ile	Thr	Thr	Asn	Ala	Leu	Val	Lys	Ser	Asn
		115					120					125			
Met	Leu	Leu	Tyr	Val	Ile	Asn	Leu	Glu	Lys	Asp	His	Lys	Pro	Val	Gly
	130					135					140				
Arg	His	Ala	Ile	Ala	Ala	Ile	Ala	Thr	Arg	Gly	Arg	Phe	Tyr	Leu	Tyr
145					150					155					160
Asp	Pro	Asn	Val	Gly	Val	Met	Ser	Val	Pro	Met	Pro	Asn	Met	Lys	Glu
			165						170					175	
Leu	Ile	Glu	Lys	Ile	Pro	Tyr	Ile	Tyr	Gly	Lys	His	Ser	Leu	Asn	Ile
			180					185					190		
Ser	Gln	Thr	Ser	Val	Tyr	Asn	Ile	Ser							
		195					200								

<210> 6832  
 <211> 114  
 <212> PRT  
 <213> B.fragilis

<400> 6832

Lys	Ser	Met	Asn	Pro	Ile	Leu	Asn	Lys	Met	Gly	Ala	Asn	Ala	Asn	Glu
1				5					10					15	
Gln	Lys	Lys	Leu	Leu	Met	Glu	Cys	Val	Ser	Met	Leu	Glu	Lys	Tyr	Val
			20					25				30			
Asn	Arg	Phe	Pro	Ala	Glu	Lys	Gly	Cys	Ala	Ser	Phe	Ser	Gly	Glu	Asp
		35					40					45			
Met	Lys	Leu	Trp	Lys	Glu	Val	Tyr	Phe	Pro	Lys	Leu	Val	Gln	Thr	Asp
	50					55					60				
Ile	Leu	Leu	Asp	Gly	Lys	Phe	Phe	Cys	Gly	Thr	Ser	Ser	Gly	Asn	Ser
65					70					75				80	
Gly	Ile	Gly	Thr	Asp	Gly	Tyr	Phe	Thr	Gly	Tyr	Glu	Phe	Phe	Gln	Phe
			85						90					95	
Ile	Tyr	Arg	Ala	Tyr	Lys	Ala	Leu	Tyr	Glu	Leu	Glu	Lys	Ala	Ser	Gln
			100					105					110		
Met	Arg														

<210> 6833  
 <211> 323  
 <212> PRT  
 <213> B.fragilis

<400> 6833

Tyr	Ser	Met	Lys	Lys	Arg	Glu	Phe	Lys	Ile	Ser	Phe	Phe	Leu	His	Val
1				5					10					15	
Trp	Glu	Arg	Lys	Ala	Glu	Glu	Ile	Ser	Leu	Glu	Glu	Phe	His	Asn	Asp
			20					25				30			
Leu	Arg	Gly	Ala	Arg	Trp	Lys	Val	Leu	Ala	Glu	Ser	Tyr	Arg	Arg	Trp
		35					40					45			
Met	Arg	Thr	Gly	Met	Thr	Glu	Gly	Lys	Arg	Leu	Lys	Gly	Ala	Leu	
	50					55				60					
Asn	Ala	Val	Val	Val	Ala	Gly	Lys	Cys	Arg	Gly	Gly	His	Ala	Ala	Asn
65					70					75				80	
Gln	Val	Thr	Glu	Leu	Asn	Gly	Leu	Ala	Leu	Phe	Asp	Phe	Asp	His	Cys
				85					90					95	

Leu Glu Met Leu Ala Gly Met Lys Glu Lys Ala Gly Ala Leu Pro Tyr  
 100 105 110  
 Val Val Gly Ala Phe Val Ser Ile Ser Gly Glu Gly Leu Lys Leu Ile  
 115 120 125  
 Val Arg Ile Asp Ala Glu Asn Ala Gly Gln Tyr Ala Val Ala Tyr Pro  
 130 135 140  
 Val Val Ala Arg Glu Leu Glu Arg Val Leu Gly His Pro Cys Asp Met  
 145 150 155 160  
 Ser Cys Arg Asp Leu Gly Arg Ala Cys Tyr Ala Ser Tyr Asp Pro Glu  
 165 170 175  
 Ala Tyr Tyr Asn Pro Gly Ala Gly Val Phe Pro Trp Arg Glu Gln Val  
 180 185 190  
 Asp Gly Leu Leu Gln Ala Glu Gly Glu Cys Ser Ala Gln Ser Val Gly  
 195 200 205  
 Lys Ala Cys Pro Ala Gly Val Ala Ser Glu Ala Gly Asp Gly Phe Met  
 210 215 220  
 Gln Val Phe Leu Asn Asp Phe Asp Ala Arg Asn Pro Phe Val Ala Gly  
 225 230 235 240  
 Gly Arg His Ala Phe Val Leu Lys Leu Gly Arg Val Ala Arg Tyr Lys  
 245 250 255  
 Gly Phe Ser Pro Glu Glu Met Arg Leu Leu Gln Lys Ala Val Val Glu  
 260 265 270  
 Lys Tyr Ala Gln Ala Asp Phe Gly Ser Gly Glu Ile Glu Lys Thr Leu  
 275 280 285  
 Ser Ser Gly Tyr Gln Tyr Val Ser Val Arg Arg Ala Asp Ala Val Met  
 290 295 300  
 Ala Ser Gln Gly Pro Lys Val Gln Gly Pro Leu Tyr Ala Leu Arg Gly  
 305 310 315 320  
 Gly Gly Glu

<210> 6834  
 <211> 81  
 <212> PRT  
 <213> B.fragilis

<400> 6834  
 Ile Lys Met Lys Arg Ile Thr Asp Arg Thr Asn Phe Ser Val Ile Asn  
 1 5 10 15  
 Thr Val Val Asn Tyr Ser Glu Ala Pro Tyr Ala Val Cys Pro Gln Cys  
 20 25 30  
 Asn Ile Arg Thr Ala Cys Arg Arg Phe Pro Ser Ser Ile His Ser Val  
 35 40 45  
 Arg His Leu Tyr Pro Asp Arg Ser Thr Thr Gln Lys His Lys Tyr Asp  
 50 55 60  
 Lys Asp Lys Ile Gln Lys Lys Ala Val Met Ile Pro Ile Phe Thr His  
 65 70 75 80  
 Ile

<210> 6835  
 <211> 449  
 <212> PRT  
 <213> B.fragilis

<400> 6835  
 Lys Val Ser Lys Lys Arg Glu Thr Lys Asn Ser Phe Asn Ile Phe Leu  
 1 5 10 15  
 Met Thr Lys Met Ile Met Lys Lys Ser Asp Leu Phe Lys Ile Gly Val

	20		25		30
Leu	Leu	Met	Ala	Thr	Thr
	35				
Asp	Glu	Lys	Lys	Pro	Glu
	50				
Glu	Tyr	Tyr	Ile	Ala	Gly
	65				
Gly	Val	Glu	Val	Lys	Ala
Gly	Ala	Tyr	Lys	Leu	Thr
Phe	Ser	Lys	Glu	Gly	Tyr
Ala	Asp	Asn	Ala	Ala	Asn
Ser	Lys	Lys	Ala	Pro	Glu
Val	Val	Val	Thr	Asp	Lys
Ala	Val	Ile	Ile	Pro	Pro
Val	Thr	Pro	Tyr	Glu	Glu
Gly	Asn	Asn	Val	Glu	Thr
Thr	Ala	Gln	Glu	Val	Thr
Asn	Lys	Ala	Ser	Glu	His
Gln	Lys	Thr	Thr	Thr	Arg
Ala	Ile	Tyr	Asp	Ser	Glu
Gly	Ala	Ser	Leu	Ser	Gly
Thr	Thr	Gly	Lys	Glu	Arg
Ser	Asn	Glu	Gly	Asn	Met
Glu	Ala	Thr	Ala	Gly	Trp
Met	Asn	Ala	Gly	Val	Asp
Ile	Asn	Ser	Ala	Ile	Glu
Val	Ala	His	Glu	Leu	Ile
Tyr	Leu	Asn	Gln	Ala	Lys
Ser	Gly	Gly	Arg	Thr	Val
Gln	Ile	Thr	Thr	Asn	Val

&lt;210&gt; 6836

&lt;211&gt; 403

&lt;212&gt; PRT

<213> *B. fragilis*

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (84)

&lt;223&gt; Identity of amino acid sequences at the above locations are unknown.

&lt;400&gt; 6836

Val Asn Arg Lys Ile Ile Met Leu Asn Gly Lys Lys Ile Ile Leu Gly  
 1 5 10 15  
 Ile Thr Gly Ser Ile Ala Ala Tyr Lys Ala Cys Tyr Ile Ile Arg Gly  
 20 25 30  
 Leu Ile Lys Gln Gly Ala Glu Val Gln Val Val Ile Thr Pro Ala Gly  
 35 40 45  
 Lys Glu Phe Ile Thr Pro Ile Thr Leu Ser Ala Leu Thr Gly Lys Pro  
 50 55 60  
 Val Ile Ser Glu Phe Phe Ala Gln Arg Asp Gly Thr Trp Asn Ser His  
 65 70 75 80  
 Val Asp Leu Xaa Leu Trp Ala Asp Ala Met Leu Ile Ala Pro Ala Thr  
 85 90 95  
 Ala Ser Thr Ile Gly Lys Met Ala Asn Gly Ile Ala Asp Asn Met Leu  
 100 105 110  
 Ile Thr Thr Tyr Leu Ser Ala Lys Ala Pro Val Phe Val Ala Pro Ala  
 115 120 125  
 Met Asp Leu Asp Met Phe Ala His Pro Ser Thr Gln Lys Asn Leu Asp  
 130 135 140  
 Thr Leu Arg Ser Tyr Gly Asn His Ile Ile Glu Pro Ala Ser Gly Glu  
 145 150 155 160  
 Leu Ala Ser His Leu Val Gly Lys Gly Arg Met Glu Glu Pro Glu Asn  
 165 170 175  
 Ile Ile Arg Val Leu Asp Glu Phe Phe Ser Ser Thr Gly Glu Leu Ala  
 180 185 190  
 Gly Lys Lys Val Leu Ile Thr Ala Gly Pro Thr Tyr Glu Lys Ile Asp  
 195 200 205  
 Pro Val Arg Phe Ile Gly Asn Tyr Ser Ser Gly Lys Met Gly Phe Ala  
 210 215 220  
 Leu Ala Glu Glu Cys Ala Arg Arg Gly Ala Asp Val Val Leu Ile Ala  
 225 230 235 240  
 Gly Pro Val Gln Gln Lys Thr Tyr His Ser His Ile Thr Arg Ile Asp  
 245 250 255  
 Val Glu Ser Ala Gln Asp Met Tyr Glu Ala Ala Met Ala Gln Tyr Pro  
 260 265 270  
 Leu Val Asp Ala Gly Ile Leu Cys Ala Ala Val Ala Asp Phe Thr Pro  
 275 280 285  
 Asp Ala Val Ala Asp Lys Lys Ile Lys Arg Glu Gly Asp Glu Leu Leu  
 290 295 300  
 Leu His Leu Lys Pro Thr His Asp Ile Ala Ala Ala Leu Gly Lys Ile  
 305 310 315 320  
 Lys Thr Pro Gly Gln Lys Leu Ile Gly Phe Ala Leu Glu Thr Asn Asp  
 325 330 335  
 Glu Gln Arg Asn Ala Glu Gly Lys Leu Ile Arg Lys Asn Phe Asp Phe  
 340 345 350  
 Ile Val Leu Asn Ser Leu Asn Asp Ala Gly Ala Gly Phe Arg Tyr Asp  
 355 360 365  
 Thr Asn Lys Ile Ser Ile Leu Ser Cys Arg Gly Arg Thr Asp Tyr Pro  
 370 375 380  
 Leu Lys Ser Lys Thr Glu Val Ala Arg Asp Ile Ile Asp Arg Met Ile  
 385 390 395 400  
 Lys Glu Met

<210> 6837  
 <211> 455  
 <212> PRT  
 <213> B.fragilis

<400> 6837

Ser	Asp	Ala	Glu	Cys	His	Glu	Cys	Lys	Asn	Arg	Glu	Ile	Arg	Arg	Arg
1				5					10					15	
Asp	Met	Ala	Lys	Tyr	Thr	Leu	Pro	Pro	Arg	Gln	Lys	Met	Ile	Asn	Leu
			20					25					30		
Leu	Tyr	Val	Val	Leu	Ile	Ala	Met	Leu	Ala	Ile	Asn	Ile	Ser	Ser	Asp
		35					40					45			
Val	Leu	Glu	Gly	Tyr	Gly	Gln	Met	Asn	Asn	Asp	Tyr	Leu	Pro	Gln	Ile
	50					55					60				
Lys	Lys	Leu	Glu	Glu	Tyr	Asn	Arg	Thr	Leu	Leu	Glu	Arg	Ile	Asn	Ser
65					70					75				80	
Arg	Asn	Asp	Lys	Ala	Ala	Leu	Ser	Ala	Gln	Asn	Ile	Asp	Ala	Ala	Ala
				85					90					95	
Gly	Lys	Leu	Met	Asp	Thr	Leu	Glu	Glu	Leu	Lys	Glu	Asp	Ile	Ala	Arg
			100					105					110		
Lys	Ala	Asp	Lys	Glu	Lys	Tyr	Glu	Ala	Gly	Lys	Leu	Lys	Ala	Lys	Asp
			115				120					125			
Asp	Leu	Asn	Ala	Val	Pro	Glu	Val	Phe	Leu	Ser	Val	Thr	Gly	Gly	Lys
	130					135					140				
Gly	Lys	Ala	Leu	Arg	Leu	Ser	Leu	Asp	Thr	Phe	Lys	Glu	Asp	Ala	Leu
145					150					155				160	
Ser	Leu	Ile	Lys	Asn	Asp	Ala	His	Arg	Gln	Leu	Val	Gly	Thr	Tyr	Leu
				165					170					175	
Asn	Thr	Glu	Ser	Pro	Gly	Thr	Gly	Ile	Ser	Trp	Glu	Lys	Glu	Thr	Phe
			180					185					190		
Ser	Tyr	Leu	Pro	Ala	Ile	Gly	Gly	Val	Thr	Phe	Ile	Asn	Lys	Met	Gln
		195					200					205			
Glu	Glu	Val	Leu	Leu	Cys	Val	Asn	Glu	Val	Tyr	Arg	Ser	Leu	Leu	Tyr
	210					215					220				
Glu	Glu	Ala	Glu	Asp	Gly	Lys	Gly	Gly	Ala	Phe	Val	Phe	Ile	Asn	Glu
225					230					235				240	
Asp	Gln	Met	Ile	Val	Asn	Lys	Asp	Gly	Thr	Val	Asp	Leu	Pro	Val	Val
				245					250					255	
Gln	Ile	Thr	Pro	Ala	Leu	Thr	Ser	Ile	Leu	Tyr	Thr	Asp	Tyr	Glu	Asn
			260					265					270		
Pro	Leu	Asn	Ile	Leu	Thr	Ala	Gly	Ile	Pro	Phe	Asn	Glu	Val	Thr	Phe
		275					280					285			
Arg	Met	Thr	Asn	Gly	Lys	Ile	Leu	Lys	Arg	Gly	Asn	His	Cys	Ile	Ala
	290					295					300				
Val	Pro	Asp	Glu	Lys	Ala	Gln	Thr	Ala	Thr	Val	Thr	Ala	Thr	Gln	Ile
305					310					315				320	
Lys	Asn	Gly	Val	Ala	Arg	Gln	Leu	Ala	Glu	Tyr	Arg	Tyr	Thr	Val	Lys
				325					330					335	
Ala	Leu	Pro	Asp	Pro	Thr	Pro	Tyr	Ile	Leu	Cys	Thr	Asp	Glu	Asn	Gly
		340					345					350			
Arg	Thr	Val	Gln	Tyr	Arg	Gly	Asn	Val	Pro	Ile	Asn	Lys	Arg	Leu	Val
		355					360					365			
Ser	Asn	Met	Thr	Gln	Leu	Gly	Ala	Ser	Ile	Ser	Asp	Gly	Pro	Lys	Ala
	370					375					380				
Asn	Tyr	Glu	Ile	Ser	Ser	Phe	Glu	Met	Val	Leu	Ile	Lys	Gly	Ser	Ser
385					390					395				400	
Lys	Ala	Val	Thr	Ser	Ile	Pro	Asn	Thr	Gly	Asn	Lys	Phe	Ser	Ala	Arg

405 410 415  
 Gln Met Glu Leu Ile Arg Gln Leu Glu Lys Gly Asp Lys Phe Tyr Ile  
 420 425 430  
 Thr Ser Ile Val Val Thr Gly Pro Gly Asn Lys Lys Lys Gln Ile Ala  
 435 440 445  
 Ser Ile Asn Val Val Leu Ile  
 450 455

<210> 6838  
 <211> 418  
 <212> PRT  
 <213> B.fragilis

<400> 6838

Cys Ile Asn Glu Asp Arg Met Met Asn Gly Ile Phe Glu Lys Leu Tyr  
 1 5 10 15  
 Asp Met Thr Ala Phe Ser Asn Ile Val Ala Glu Pro Gln Phe Leu Val  
 20 25 30  
 Met Tyr Val Ile Ala Phe Val Leu Leu Tyr Leu Gly Ile Lys Lys Gln  
 35 40 45  
 Tyr Glu Pro Leu Leu Leu Val Pro Ile Ala Phe Gly Val Leu Leu Ala  
 50 55 60  
 Asn Phe Pro Gly Gly Gly Met Gly Val Ile Gln Ala Asp Glu Asn Gly  
 65 70 75 80  
 Met Ile Leu Val Asn Gly Val Met Lys Asn Ile Trp Glu Met Pro Leu  
 85 90 95  
 His Asp Ile Ala His Glu Leu Gly Leu Met Asn Phe Val Tyr Tyr Met  
 100 105 110  
 Leu Ile Lys Thr Gly Phe Leu Pro Pro Ile Ile Phe Met Gly Val Gly  
 115 120 125  
 Ala Leu Thr Asp Phe Gly Pro Met Leu Arg Asn Leu Arg Leu Ser Ile  
 130 135 140  
 Phe Gly Ala Ala Ala Gln Leu Gly Ile Phe Thr Val Leu Leu Val Ala  
 145 150 155 160  
 Ile Leu Met Gly Phe Thr Pro Ser Glu Ala Ala Ser Leu Gly Ile Ile  
 165 170 175  
 Gly Gly Ala Asp Gly Pro Thr Ala Ile Phe Thr Thr Ile Lys Leu Ala  
 180 185 190  
 Pro His Leu Leu Gly Pro Ile Ala Ile Ala Ala Tyr Ser Tyr Met Ala  
 195 200 205  
 Leu Val Pro Val Ile Ile Pro Leu Val Val Arg Leu Leu Cys Thr Lys  
 210 215 220  
 Lys Glu Leu Ser Ile Asn Met Lys Glu Gln Glu Lys Lys Tyr Pro Ser  
 225 230 235 240  
 Lys Thr Glu Ile Lys Asn Leu Arg Val Leu Lys Ile Ile Phe Pro Ile  
 245 250 255  
 Val Val Thr Thr Val Val Ala Leu Phe Val Pro Ser Ala Val Pro Leu  
 260 265 270  
 Ile Gly Met Leu Met Phe Gly Asn Leu Val Lys Glu Ile Gly Ala Asn  
 275 280 285  
 Thr Phe Arg Leu Phe Asp Ala Ala Ser Asn Ser Ile Met Asn Ala Ala  
 290 295 300  
 Thr Ile Phe Leu Gly Leu Ser Val Gly Ala Thr Met Thr Ser Glu Ala  
 305 310 315 320  
 Phe Leu Asn Trp Thr Thr Ile Gly Ile Val Val Gly Gly Phe Leu Ala  
 325 330 335  
 Phe Ala Leu Ser Ile Ala Gly Gly Ile Phe Phe Val Lys Leu Val Asn  
 340 345 350  
 Leu Phe Thr Lys Lys Lys Ile Asn Pro Leu Ile Gly Ala Thr Gly Leu

355	360	365
Ser Ala Val Pro Met Ala	Ser Arg Val Ala Asn Asp	Ile Ala Leu Lys
370	375	380
Tyr Asp Pro Lys Asn His Val	Leu Gln Tyr Cys Met	Ala Ser Asn Ile
385	390	395
Ser Gly Val Ile Gly	Ser Ala Val Ala Ala Gly	Val Leu Ile Ser Phe
405	410	415
Leu Ser		

&lt;210&gt; 6839

&lt;211&gt; 398

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6839

Glu Val Cys Glu Thr Asn Lys Arg Ile Ile Met Asn Leu Asp Leu Asp	1	5	10	15
Phe Ile Leu Leu Asn Leu Leu Leu Tyr Thr Phe Trp Lys Ala Gly	20	25	30	
Arg Asn Ile Ser Gln Ser Met Asp Tyr Trp His Asn Ala Gly Leu Cys	35	40	45	
Val Ile Leu Phe Ser Ile Val Gln Gly Cys Arg Phe Ala Arg Gly Asn	50	55	60	
Asp Tyr Phe Ala Tyr Ser Arg Ile Phe Arg Glu Gly Ser Leu His Val	65	70	75	80
Glu Asn Pro Phe Phe Ser Val Ile Asn Glu Leu Leu Arg Ile Val Gly	85	90	95	
Ile Asn Glu Tyr Ser Cys Phe Met Val Tyr Ala Phe Thr Phe Ala Leu	100	105	110	
Cys Ala Met Ile Phe Met Lys Asp Tyr Arg Thr Tyr Ala Arg Tyr Met	115	120	125	
Phe Pro Leu Phe Leu Ile Gly Phe Met Asn Phe Glu Glu Ser Met Ile	130	135	140	
Arg Gln Ala Phe Ser Tyr Ser Phe Phe Phe Leu Tyr Leu Lys Tyr Leu	145	150	155	160
Phe Lys Leu Lys Phe Asn Lys Pro Lys Asp Ile Leu His Asn His Lys	165	170	175	
Lys Leu Ile Tyr Cys Ile Ile Phe Ala Ile Leu Thr Leu Ala Ile His	180	185	190	
Thr Gly Asn Ile Ile Ser Leu Phe Val Ile Thr Thr Leu Tyr Ile Phe	195	200	205	
Trp Arg Lys Pro Phe Gln Pro Gln Phe Ala Ile Pro Ile Tyr Val Ala	210	215	220	
Cys Val Tyr Ile Leu Pro His Ile Phe Asn Phe Asn Trp Leu Glu Pro	225	230	235	240
Ile Leu Ser Phe Ala Ala Asp Thr Asn Glu Arg Ala Ala Glu Tyr Val	245	250	255	
Lys Asn Ala Asp Tyr Trp Phe Ser Glu Lys Gly Glu Asn Asp Gln Tyr	260	265	270	
Asp Lys Asn Phe Ile Val Glu Ile Ile Gln Val Ile Gly Ser Ser Ala	275	280	285	
Leu Met Tyr Phe Gly Tyr Arg Leu Ile Ile Glu Lys Leu Pro Lys His	290	295	300	
Tyr Ala Leu Ile Thr Met Leu Asn Thr Phe Ile Ile Gly Leu Cys Ile	305	310	315	320
Glu Ser Ile Phe Val Lys Leu Glu Ile Leu His Arg Ile Gly Gln Thr	325	330	335	
Leu Asp Ile Val Gly Tyr Phe Ala Leu Ala Ile Val Val Ser Tyr Lys				

	340		345		350										
Thr	Ile	Lys	Leu	Lys	Pro	Ile	Gln	Lys	Val	Ala	Tyr	Val	Cys	Leu	Leu
	355		360		365										
Trp	Phe	Val	Tyr	Tyr	Tyr	Val	Lys	Tyr	Leu	Phe	Phe	Ser	Gly	Arg	Thr
	370		375		380										
Met	Phe	Ile	Trp	Asp	Thr	His	Tyr	Pro	Phe	Phe	Lys	Phe	Ile		
385			390		395										

&lt;210&gt; 6840

&lt;211&gt; 393

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6840

Ile	Thr	Ile	Asp	Met	Ala	Val	Lys	Ile	Leu	Ser	Val	Asp	Asp	Glu	Leu
1			5						10					15	
Asp	Leu	Glu	Val	Leu	Leu	Thr	Gln	Tyr	Phe	Arg	Arg	Gln	Ile	Arg	Lys
			20					25					30		
Gly	Glu	Tyr	Glu	Phe	Ala	Phe	Ala	His	Asn	Gly	Leu	Glu	Ala	Leu	Gln
		35					40					45			
Lys	Leu	Leu	Glu	Thr	Pro	Asp	Phe	Asp	Ile	Ile	Leu	Ser	Asp	Ile	Asn
	50					55					60				
Met	Pro	Glu	Met	Asp	Gly	Leu	Thr	Leu	Leu	Ala	Lys	Val	Asn	Glu	Leu
65					70					75					80
Lys	Asn	Pro	Ala	Met	Lys	Cys	Ile	Met	Val	Ser	Ala	Tyr	Gly	Asp	Met
				85					90					95	
Asp	Asn	Ile	Arg	Ser	Ala	Met	Asn	Lys	Gly	Ala	Phe	Asp	Phe	Ala	Thr
			100					105					110		
Lys	Pro	Ile	Asp	Leu	Asp	Asp	Leu	Ser	Arg	Thr	Ile	Glu	Lys	Ala	Ile
		115					120					125			
Glu	Gln	Val	Arg	Tyr	Ile	Arg	Glu	Ser	Gln	Gln	Glu	His	Asn	Gln	Leu
		130				135					140				
Glu	Ser	Ile	Lys	Asn	Asp	Leu	Ala	Ile	Ala	Gly	Glu	Ile	Gln	Gln	Thr
145					150					155					160
Ile	Leu	Pro	Arg	Ser	Phe	Pro	Pro	Phe	Pro	Glu	Leu	Thr	Glu	Val	Val
				165					170					175	
Asp	Ile	Tyr	Ala	Ser	Met	Thr	Pro	Ala	Lys	Asp	Val	Gly	Gly	Asp	Phe
			180					185					190		
Tyr	Asp	Phe	Gln	Ile	Asp	Asp	Glu	Arg	Ile	Gly	Leu	Val	Ile	Ala	
	195					200					205				
Asp	Val	Ser	Gly	Lys	Gly	Val	Pro	Ala	Ser	Leu	Phe	Met	Ala	Val	Ser
	210					215					220				
Arg	Thr	Leu	Leu	Arg	Ala	Thr	Ala	Leu	Arg	Gly	Val	Ser	Ser	Ala	Glu
225					230					235					240
Cys	Leu	Thr	Tyr	Ala	Asn	Lys	Leu	Leu	Cys	Lys	Glu	Ser	Leu	Asp	Ser
				245					250					255	
Met	Phe	Val	Thr	Val	Phe	Tyr	Gly	Ile	Tyr	His	Tyr	Lys	Thr	Gly	Met
		260						265					270		
Met	Asp	Tyr	Thr	Asn	Ala	Gly	His	Asn	Pro	Pro	Tyr	Leu	Leu	Arg	Gly
		275					280					285			
Gly	Arg	Thr	Val	Glu	Cys	Leu	Pro	Val	Ala	Ser	Asn	Phe	Val	Val	Gly
	290					295					300				
Val	Phe	Asp	Asp	Ile	Glu	Phe	Glu	Ser	Asn	Thr	Leu	Thr	Phe	Gly	Ile
305					310					315					320
Gly	Asp	Thr	Leu	Leu	Tyr	Thr	Asp	Gly	Val	Thr	Glu	Ala	Phe	Asn	
			325					330					335		
Asp	Lys	Arg	Glu	Gln	Phe	Ser	Glu	Ser	Asn	Leu	Gln	Asp	Ile	Leu	Ala
			340					345				350			
Ser	Met	His	Glu	Ser	Ser	Ser	Ala	Lys	Glu	Val	Val	Thr	Ser	Val	Leu



[illegible]

<400> 6841

<210> 6842

$\langle 211 \rangle$  134

<212> PRT

<213> B.fragilis

<400> 6842

<210> 6843

<211> 206  
 <212> PRT  
 <213> B.fragilis

<400> 6843

Tyr	Asn	Met	Asp	Asn	Lys	Lys	Val	Arg	Ser	Thr	Ser	Ser	Gln	Val	Met
1				5					10					15	
Glu	Leu	Gln	Gln	Leu	Ile	Ala	Gly	Pro	Leu	Ile	Ala	Thr	Ile	Glu	Ala
			20					25					30		
Asp	Ser	Leu	Ser	Ser	Gln	Arg	Tyr	Leu	Asp	Tyr	Leu	Met	Lys	Ile	Ala
		35					40					45			
Phe	Glu	Ser	Tyr	Asp	Pro	Val	Thr	Gly	Arg	Thr	Gly	Lys	Ile	Arg	Met
	50					55					60				
Leu	Thr	Phe	Asn	Tyr	Gln	Ser	Gln	Asp	Ala	Gly	Gly	Gly	Arg	Thr	Gln
65					70					75					80
Ser	Val	Ser	Ile	Pro	Ile	Leu	Thr	Leu	Val	Pro	Leu	Pro	Leu	Leu	Gln
				85					90					95	
Val	Gln	Glu	Ala	Asp	Phe	Asp	Phe	Asp	Ile	Lys	Ile	Leu	Asp	Ala	Leu
			100					105					110		
Ser	Glu	Thr	Ala	Glu	Glu	Lys	Phe	Ser	Leu	Glu	Glu	Gly	Lys	Ser	Val
		115					120					125			
Asn	Glu	Pro	Gln	Ser	Gly	Gly	Gly	Phe	Lys	Leu	Arg	Ala	Ser	Leu	Ala
	130					135					140				
Pro	Lys	Gln	Gly	Glu	Gly	Ser	Ser	Thr	Ser	Asn	Val	Gln	Gln	Ser	Leu
145					150					155					160
Ser	Ala	Asn	Met	Lys	Val	Lys	Val	Lys	Met	Arg	Gln	Ala	Asp	Met	Pro
				165					170					175	
Ala	Gly	Leu	Ser	Asn	Leu	Leu	His	Leu	Thr	Ala	Ser	Asn	Met	Gln	Val
			180					185					190		
Glu	Glu	Thr	Glu	Ala	Glu	Glu	Ile	Thr	Glu	Gly	Gly	Asn	Lys		
		195					200					205			

<210> 6844  
 <211> 193  
 <212> PRT  
 <213> B.fragilis

<400> 6844

Arg	Ile	Ala	Glu	Ser	Ser	Glu	Cys	Ala	Gly	Glu	Phe	Gly	Glu	Lys	Lys
1				5					10					15	
Gln	Val	Gln	Arg	Leu	Asn	Gly	Arg	Gly	Met	Lys	Leu	Thr	Phe	Phe	Lys
			20					25					30		
Arg	Met	Gly	Glu	Lys	Ile	Arg	His	Pro	Phe	Arg	Lys	Glu	Ile	Pro	Lys
		35					40					45			
Thr	Ile	Pro	Val	Val	Glu	Thr	Ala	Pro	Gln	Pro	Val	Ala	Asp	Asn	Thr
	50					55					60				
Thr	Glu	Ala	Thr	Ala	Glu	Asp	Ser	Ser	Val	Ile	Arg	Ser	Ala	Asp	Gln
65					70					75					80
Cys	Gly	Glu	Gln	Ala	Arg	Tyr	Phe	Leu	Leu	Arg	Asn	Asn	Lys	Pro	Val
			85					90					95		
Gly	Lys	Pro	Phe	Ser	Tyr	Tyr	His	Pro	Glu	Ile	Arg	Ile	Val	His	Val
		100					105						110		
Gly	Ser	Phe	Val	Asn	Ala	Phe	Leu	Phe	Phe	Leu	Arg	Met	Cys	Asp	Gln
		115					120					125			
Arg	Leu	Leu	Thr	Tyr	Arg	Gln	Thr	Gly	Glu	Tyr	Leu	His	Cys	Thr	Ala
	130					135					140				
Val	Phe	Pro	Asp	Glu	Ser	Gly	Asn	Leu	Tyr	Phe	Thr	Asn	Lys	Val	Thr
145					150					155					160
Cys	Arg	Asn	Lys	Glu	Asn	Thr	Val	Ala	Val	Leu	Lys	Ile	Asp	Tyr	Val

165                      170                      175  
 Gly Leu Lys Pro Lys Ile Thr Glu Ile Arg Phe Glu Leu Asn Ile Lys  
                          180                      185                      190  
 Lys

<210> 6845  
 <211> 190  
 <212> PRT  
 <213> B.fragilis

<400> 6845  
 Arg Ile Arg Glu Arg Pro Ser Leu Pro Phe Leu Lys Pro Tyr Ser Gln  
 1                      5                      10                      15  
 Ser Asp Met Lys Ser Trp Leu Ala Ala Tyr Val Arg Leu Tyr His Glu  
                          20                      25                      30  
 Lys Lys Thr Arg Asp Arg Leu Thr Ala Met Gly Ile Glu Ser Phe Leu  
                          35                      40                      45  
 Pro Val Gln Glu Glu Ile His Gln Trp Ser Asp Arg Arg Lys Lys Ile  
                          50                      55                      60  
 Glu Arg Val Val Ile Pro Met Met Ile Phe Val His Val Asp Pro Ala  
 65                      70                      75                      80  
 Glu Arg Ala Glu Val Leu Thr Leu Ser Ser Val Ser Arg Tyr Met Val  
                          85                      90                      95  
 Leu Arg Gly Gln Ser Thr Pro Ala Val Ile Pro Asp Glu Gln Met Glu  
                          100                      105                      110  
 Arg Phe Arg Phe Met Leu Asp Tyr Ser Glu Glu Ala Ile Glu Val Cys  
                          115                      120                      125  
 Ser Ser Pro Leu Ala Pro Gly Glu Gln Val Arg Val Ile Lys Gly Pro  
                          130                      135                      140  
 Leu Ala Gly Leu Glu Gly Glu Leu Val Thr Ile Asp Gly Lys Ser Lys  
 145                      150                      155                      160  
 Val Ala Val Arg Leu Asp Met Leu Gly Cys Ala His Val Asp Met Pro  
                          165                      170                      175  
 Val Gly Phe Val Glu Arg Val Gly Lys Met Glu Ala Val Arg  
                          180                      185                      190

<210> 6846  
 <211> 549  
 <212> PRT  
 <213> B.fragilis

<400> 6846  
 Arg Asn Ile Leu Met Glu Lys Leu His Ile Arg Lys Ile Ala Ser Leu  
 1                      5                      10                      15  
 Gly Leu Met Leu Cys Phe Phe Thr Gly Val Gly Ala Gln Thr Pro Val  
                          20                      25                      30  
 Lys Val Glu Lys Arg Lys Glu His Lys Ser Asn Thr Val Ile Pro Val  
                          35                      40                      45  
 Val Lys Gly Asn Val Thr Asp Thr Leu Ser Leu Val Ser Phe Asn Asp  
                          50                      55                      60  
 Phe His Gly Ala Phe Ala Cys Asp Lys Gly Val Pro Gly Ala Gly Gln  
 65                      70                      75                      80  
 Leu Val Gln Thr Val Leu Thr Gln Lys Glu Lys Asn Lys Asn Thr Ile  
                          85                      90                      95  
 Val Leu Ser Val Gly Asp Asn Phe Ser Gly Ser Tyr Phe Ser Arg Ile  
                          100                      105                      110  
 Thr Arg Gly Asn Pro Leu Pro Glu Met Phe Gln Glu Met Asp Val Lys  
                          115                      120                      125

Met Ser Ala Val Gly Asn His Glu Phe Asp Trp Gly Leu Pro Tyr Leu  
 130 135 140  
 Thr Asp Thr Ala Lys Val Tyr Met Asn Phe Val Ala Ala Asn Ile Ile  
 145 150 155 160  
 Thr Asp Arg Gly Asp Thr Leu Glu Trp Ala Lys Pro Tyr Arg Ile Val  
 165 170 175  
 Thr Leu Asn Leu Lys Asn Gly Gly Thr Val Arg Val Ala Phe Val Gly  
 180 185 190  
 Leu Thr Thr Thr Asp Thr Ala His Lys Thr Ser Pro Glu Asn Ile Lys  
 195 200 205  
 Gly Leu Ala Phe Val His Pro Val Tyr Ala Ala Arg Val Glu Thr Ala  
 210 215 220  
 Cys Arg Leu Lys Lys Glu Gly Lys Val Asp Met Val Val Leu Leu Met  
 225 230 235 240  
 His Ile Gly Thr Asn Met Lys Asn Arg Asp Ile Ile Glu Glu Glu Asn  
 245 250 255  
 Ala Lys Leu Leu Pro Phe Leu Lys Gly Val Asp Ala Ile Ile Ser Gly  
 260 265 270  
 His Ser His Glu Val Val Leu Ser Lys Val Asn Asp Val Pro Ile Ile  
 275 280 285  
 Gln Ala Gly Val Asn Gly Thr His Ile Gly Lys Leu Asp Phe Arg Val  
 290 295 300  
 Val Lys Glu Glu Gly Gly Asn Arg Ile Ser Tyr Ile Gly Gly Asp Thr  
 305 310 315 320  
 Ile Arg Thr Glu Gly Pro Ser Asn Ala His Ile Asp Ser Leu Val Asp  
 325 330 335  
 Lys Val Leu Ala Val Tyr Gly Leu Ser Glu Lys Leu Ile Leu Ala Lys  
 340 345 350  
 Asp Ala Leu Ile His Asp Arg Thr Ile Asn Lys Trp Glu Tyr Thr Pro  
 355 360 365  
 Val Gly Ala Tyr Val Thr Ala Ala Tyr Val Arg Ser Phe Leu Glu Asn  
 370 375 380  
 Glu Lys Val Pro Ala Glu Leu Lys Val Leu Pro Val Ile Gly Val Asn  
 385 390 395 400  
 His Phe Gly Gly Leu Arg Ala Ser Ile Pro Ala Gly Glu Val Thr Arg  
 405 410 415  
 Leu Arg Ala Gly Asn Val Leu Pro Phe Gly Gly Asn Val Val Ala Tyr  
 420 425 430  
 Glu Phe Thr Gly Glu Arg Leu Lys Gln Leu Leu Asp Asp Gly Arg Arg  
 435 440 445  
 Asn Lys Asn Gly Phe Leu Gln Thr Ser Tyr Leu Lys Leu His Leu Asn  
 450 455 460  
 Ser Lys Gly Asn Val Glu Thr Ile Thr Asp Cys Arg Thr Asn Lys Ile  
 465 470 475 480  
 Ile Arg Asp Asp Asp Lys Cys Ile Val Val Leu Asp Ala Phe Ile Thr  
 485 490 495  
 Ser Gly Gly Asp Gly Tyr Asp Ser Lys Leu Phe Ser Gly Tyr Glu Ile  
 500 505 510  
 Gly Asp Phe Asn Ser Gln Asn Leu Glu Thr Thr Val Ala Phe Ile Asp  
 515 520 525  
 Tyr Leu Lys Ser Leu Lys Gly Phe Val Ser Ser Glu Ala Ala Pro Ile  
 530 535 540  
 Pro Ile Val Gln Lys  
 545

&lt;210&gt; 6847

&lt;211&gt; 75

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6847

```

Ser His Thr Leu Phe Phe Leu Gln Ala Tyr Pro Met Pro Ile Ser Ile
1          5          10          15
Leu Cys His Thr Leu Pro Thr Tyr Asp Phe Thr Ala Pro Trp Ser Tyr
          20          25          30
Val Gln Pro Leu Ser Arg Ser His Ala Asn Ala Pro Arg Phe Leu Ala
          35          40          45
Asp Leu Asn Pro Ala Asp Lys Phe Met Glu Leu Asn Leu Pro His Val
          50          55          60
Gly His Leu Ser His Gly Ser Leu Leu Thr Thr
          65          70          75

```

&lt;210&gt; 6848

&lt;211&gt; 258

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6848

```

Thr Met Lys Leu Asn Leu Lys Asn Pro Ile Val Phe Phe Asp Leu Glu
1          5          10          15
Thr Thr Gly Thr Asn Ile Asn Ser Asp Arg Ile Val Glu Ile Cys Tyr
          20          25          30
Leu Lys Val Tyr Pro Asn Gly Asn Glu Glu Ser Lys Thr Leu Arg Ile
          35          40          45
Asn Pro Glu Met Pro Ile Pro Ala Glu Ser Ser Ala Val His Gly Ile
          50          55          60
Tyr Asp Ala Asp Val Ala Asp Cys Pro Thr Phe Lys Glu Val Ala Lys
65          70          75          80
Ser Ile Ala Asn Asp Ile Glu Gly Cys Asp Leu Ala Gly Phe Asn Ser
          85          90          95
Asn Arg Phe Asp Ile Pro Val Leu Ala Glu Glu Phe Leu Arg Ala Gly
          100          105          110
Val Asp Ile Asp Met Ser Lys Arg Lys Phe Val Asp Val Gln Val Ile
          115          120          125
Phe His Lys Met Glu Gln Arg Thr Leu Thr Ala Ala Tyr Lys Phe Tyr
          130          135          140
Cys Gly Arg Asn Leu Glu Asp Ala His Thr Ala Glu Ala Asp Thr Arg
145          150          155          160
Ala Thr Tyr Glu Val Leu Met Ala Gln Leu Asp Arg Tyr Pro Glu Glu
          165          170          175
Leu Gln Asn Asp Met Ser Phe Leu Ala Asp Tyr Ser Ser Tyr Asn Lys
          180          185          190
Asn Val Asp Phe Ala Gly Arg Met Val Tyr Asp Asp Asn Gly Val Glu
          195          200          205
Val Phe Asn Phe Gly Lys Tyr Lys Gly Gln Ser Val Ser Glu Val Leu
          210          215          220
Lys Lys Asp Pro Gly Tyr Tyr Ser Trp Ile Leu Asn Ser Asp Phe Thr
225          230          235          240
Leu Asn Thr Lys Ala Met Leu Thr Lys Ile Arg Leu Arg Glu Leu Thr
          245          250          255
Gly Lys

```

&lt;210&gt; 6849

&lt;211&gt; 368

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6849

Arg His Ser Trp Trp Asp Thr Ser Lys Ser Ile Lys Ile Gln Arg Asn  
 1 5 10 15  
 Lys Tyr Thr Ile Lys Pro Leu Leu Ser Met Pro Lys Val Leu Val Val  
 20 25 30  
 Ala Thr Ser Arg Lys Thr Lys Gly Ile Thr Ser Val Val Lys Ala  
 35 40 45  
 His Glu Thr Gly Glu Gln Trp Lys Lys Phe His Cys Lys Trp Ile Glu  
 50 55 60  
 Thr His Arg Asp Gly Asn Ser Val Arg Lys Leu Trp Tyr Leu Ala Thr  
 65 70 75 80  
 Ala Leu Ile Glu Tyr Ile Cys Leu Leu Pro Phe Tyr Asp Ile Val His  
 85 90 95  
 Ile His Val Gly Leu Arg Thr Ser Val Asn Arg Lys Leu Ile Phe Ala  
 100 105 110  
 Arg Ile Ala Leu Leu Phe Arg Lys Lys Ile Ile Val His Phe His Pro  
 115 120 125  
 Ala Thr Glu Lys His Leu Phe Asp Pro Met Phe Ser Gly Asn Ile Lys  
 130 135 140  
 His Leu Phe Glu Leu Ser Asn Lys Leu Leu Val Leu Ser Pro Lys Trp  
 145 150 155 160  
 Ile Glu Trp Ile Asn Glu Ala Tyr Arg Gly Asn Lys Tyr Asn Ile Gln  
 165 170 175  
 Val Leu Tyr Asn Pro Cys Pro Ser Val Lys Arg Ser Ile Gln Arg Glu  
 180 185 190  
 Asn Tyr Ile Leu Tyr Ala Gly Ile Leu Ser Asp Arg Lys Gly Tyr Asn  
 195 200 205  
 Arg Leu Ile Glu Ala Phe Ser Lys Ile Ala Ala Lys Tyr Pro Asp Trp  
 210 215 220  
 Lys Ile Lys Phe Ala Gly Asn Gly Glu Ile Glu Lys Gly Lys Ser Leu  
 225 230 235 240  
 Ala Val Lys Phe Gly Ile Glu Gln Gln Thr Glu Phe Leu Gly Trp Ile  
 245 250 255  
 Ala Gly Asn Thr Lys Glu Ser Ile Phe Gln His Ala Ser Ile Tyr Cys  
 260 265 270  
 Leu Pro Ser Trp Gly Glu Gly Phe Pro Met Gly Val Ile Asp Ala Ile  
 275 280 285  
 Ala Tyr Gly Ile Pro Val Ile Thr Thr Pro Val Gly Gly Leu Glu Lys  
 290 295 300  
 Val Phe His Asp Gly Ile Asp Ala Met Ile Tyr Glu Thr Tyr Asp Leu  
 305 310 315 320  
 Lys Met Leu Ala Asp Lys Leu Glu Gln Leu Ile Lys Ser Glu Thr Tyr  
 325 330 335  
 Arg Asn Ser Ile Val Asn Glu Ala Asp Lys Leu Val Cys Ser Asp Phe  
 340 345 350  
 Asn Ile Ile Thr Ile Cys Asn Lys Ile Glu Lys Ile Tyr Glu Asn Met  
 355 360 365

&lt;210&gt; 6850

&lt;211&gt; 378

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6850

Cys His His Arg Ser Gln Cys Cys Cys Asn Lys Arg Arg Thr Lys Gln  
 1 5 10 15  
 Leu Tyr Ser Ser Gly Cys Thr Cys Lys Asn Tyr Lys Glu Asn Met Ile  
 20 25 30  
 Tyr Leu Ile Cys Gln Asp Trp Ser Asn Thr Ser Asn Asn His Ala Gly

35	40	45
Ile Lys Tyr Leu Cys Asn Gln Ile Gln Glu Met Tyr Pro Glu Ser Tyr		
50	55	60
Lys Thr Phe Val Ile Pro Ala Phe Trp Asn Asp Arg Ser Lys Ser Pro		
65	70	75
Ile Arg Ile Ile Ala Ser Leu Gln Tyr His Phe Ala Arg Tyr Lys His		
	85	90
Arg Leu Tyr Thr Lys Lys Leu Tyr Asn His Ile Ile Ser Lys Leu Arg		
	100	105
Lys Gly Asp Lys Ile Ile Leu Met Glu Tyr Met Glu Lys Phe Phe Pro		
	115	120
Met Leu His Phe Ala Gln Lys Val Lys Arg Tyr Lys Phe Asn Ile Pro		
	130	135
Leu Tyr Ala Met Val His Leu Val Pro Ser Arg Leu Glu Lys Gly Phe		
145	150	155
Ser Asp Lys Lys Thr Phe Asp Glu Trp Thr Ile Cys Ile Asp Lys Phe		
	165	170
Leu Thr Leu Gly His Ser Leu Thr Gln Phe Leu Ile Thr Lys Gly Leu		
	180	185
Pro Glu Asp Lys Val Val Thr Thr Phe His Tyr Val Asp Glu Tyr Tyr		
	195	200
His Asn Lys Arg Pro Val Arg Leu His Lys Asn Ile Arg Val Ile Ala		
	210	215
Met Gly Asn Gln Met Arg Asn Leu Lys Leu Lys Thr Ile Val Asp		
225	230	235
Asn Asn Pro Asn Val Asn Phe Thr Ile Cys Gln Gly Val Asn Asp Leu		
	245	250
Ser Ser Tyr Phe Leu Lys Asn Thr Asn Val Glu Leu Ile Pro Phe Val		
	260	265
Glu Glu Ser Glu Leu Arg Gln His Met Ala Asn Ala Asp Ile Ser Leu		
	275	280
Asn Val Met Glu Asp Thr Val Gly Ser Asn Val Ile Val Thr Ser Leu		
	290	295
Ala Met Gly Leu Ala Met Ile Cys Ser Asn Val Gly Ser Ile Lys Asp		
305	310	315
Tyr Cys Asp Asp Ser Asn Thr Ile Phe Cys Asn Asn Ser Asn Val Glu		
	325	330
Asp Phe Ser Gln Ala Ile Thr Ala Leu Gln Thr Asp Arg Ile Arg Leu		
	340	345
Asn Thr Met Gln Gln Ser Ala Ala Asn Met Gly Leu Gln Phe Thr Ile		
	355	360
Glu Lys Phe Val Arg Gln Ile Ser Ala Leu		365
370	375	

&lt;210&gt; 6851

&lt;211&gt; 298

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6851

Val Gly Asp Arg Met Glu Ser Thr Tyr Ile Glu Leu Lys Asp Ile Ala	
1	5
Gln Glu Ile Ser Asp Gln Gly Glu Gly Ile Glu Phe Asn Pro Leu Arg	
	20
Leu Glu Glu Val Asn Asp Gly Leu Asn Leu Ile Tyr Ser Leu Glu Gln	
	35
Lys His Arg Val Gln Thr Val Glu Glu Leu Ile Ala Leu Ser Glu Gln	
	50
Tyr Ala Thr Arg Leu Ala Ala Ile Thr Ser Tyr Asp Asp Arg Ile Val	
	55
	60

65		70		75		80									
Lys	Leu	Thr	Glu	Arg	Arg	Asp	Ala	Gln	Tyr	Asn	Lys	Val	Lys	Lys	Gln
				85					90					95	
Ala	Ala	Val	Leu	Thr	Lys	Ala	Arg	Thr	Glu	Ile	Ala	Arg	Glu	Val	Glu
			100					105					110		
Gln	Gln	Met	Ala	Ala	Arg	Leu	Ile	Pro	Leu	Gly	Ile	Pro	Asn	Val	Arg
		115					120					125			
Phe	Gln	Val	Glu	Met	Gly	Leu	Lys	Lys	Glu	Pro	Gly	Pro	Gln	Gly	Ala
		130				135					140				
Asp	Thr	Val	Asn	Phe	Leu	Phe	Ser	Ala	Asn	Lys	Asn	Gly	Thr	Leu	Gln
145					150					155					160
Ser	Val	Ser	Ser	Val	Ala	Ser	Gly	Gly	Glu	Ile	Ala	Arg	Val	Met	Leu
				165					170					175	
Ser	Ile	Lys	Ala	Met	Ile	Ala	Gly	Ala	Val	Lys	Leu	Pro	Thr	Ile	Val
			180					185					190		
Phe	Asp	Glu	Ile	Asp	Thr	Gly	Val	Ser	Gly	Glu	Ile	Ala	Asp	Arg	Met
		195				200						205			
Ala	Asp	Ile	Met	Gln	Glu	Met	Gly	Glu	Gln	Asn	Arg	Gln	Val	Ile	Ser
		210				215					220				
Ile	Thr	His	Leu	Pro	Gln	Ile	Ala	Ala	Arg	Gly	Arg	Ala	His	Tyr	Lys
225					230					235					240
Val	Tyr	Lys	Arg	Asp	Asn	Asp	Thr	Glu	Thr	Asn	Ser	His	Ile	Arg	Arg
				245					250					255	
Leu	Thr	Asp	Glu	Arg	Val	Glu	Glu	Leu	Ala	His	Met	Leu	Ser	Gly	
			260				265					270			
Ala	Thr	Leu	Thr	Glu	Ala	Ala	Leu	Ser	Asn	Ala	Arg	Ala	Leu	Leu	Glu
			275				280					285			
Pro	Ser	Leu	Lys	Glu	Arg	Lys	Ile	Ile	Lys						
		290				295									

&lt;210&gt; 6852

&lt;211&gt; 263

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6852

Phe	Met	Leu	Arg	Ser	Leu	Tyr	Ile	Gln	Asn	Tyr	Ala	Leu	Ile	Glu	Lys
1				5					10					15	
Leu	Asp	Ile	Arg	Phe	Glu	Thr	Gly	Phe	Ser	Val	Ile	Thr	Gly	Glu	Thr
			20					25					30		
Gly	Pro	Gly	Gln	Ser	Ile	Ile	Leu	Gly	Ala	Ile	Gly	Leu	Leu	Leu	Gly
			35				40					45			
Gln	Arg	Ala	Asp	Val	Lys	Ala	Ile	Arg	Gln	Gly	Ala	Ser	Lys	Cys	Val
			50			55					60				
Ile	Glu	Ala	Arg	Phe	Asp	Ile	Ser	Ala	Tyr	His	Met	Glu	Ala	Phe	Phe
65					70				75						80
Glu	Glu	Asn	Glu	Leu	Glu	Tyr	Glu	Pro	Glu	Cys	Ile	Leu	Arg	Arg	Glu
				85				90					95		
Val	Gln	Ser	Ser	Gly	Lys	Ser	Arg	Ala	Phe	Ile	Asn	Asp	Thr	Pro	Ala
			100					105					110		
Ser	Leu	Thr	Gln	Met	Lys	Glu	Leu	Gly	Glu	Gln	Leu	Ile	Asp	Val	His
		115					120					125			
Ser	Gln	His	Gln	Asn	Leu	Leu	Asn	Lys	Glu	Gly	Phe	Gln	Leu	Asn	
		130				135					140				
Val	Leu	Asp	Ile	Leu	Ser	His	Asn	Glu	Glu	Ala	Leu	Asp	Val	Tyr	His
145					150					155					160
His	Leu	Tyr	Gln	Asp	Trp	Lys	Lys	Leu	Cys	Lys	Glu	Leu	Asp	Glu	Leu
				165					170					175	
Ile	Val	Leu	Ala	Glu	Gln	Ser	Lys	Thr	Asp	Glu	Asp	Tyr	Ile	Arg	Phe



180	185	190
Gln Leu Glu Gln Leu Glu Glu Ala His Leu Thr Ala Gly Glu Gln Glu		
195	200	205
Glu Leu Glu Gln Glu Ala Glu Thr Leu Ala His Ala Glu Asp Ile Lys		
210	215	220
Ala Gly Leu Tyr Arg Val Gly Gln Thr Leu Ala Ser Asp Glu Gly Gly		
225	230	235
Leu Leu Ala Cys Ile Glu Arg Lys Ser Trp Arg Phe Glu Trp Ala Ala		
245	250	255
Glu Ser Ile Ser Thr Cys Arg		
260		

<210> 6853  
 <211> 151  
 <212> PRT  
 <213> B.fragilis

<400> 6853
Ile Val Arg Arg Ser Tyr Asn Phe Leu Gly Ile Ser Asp Glu Tyr Ser
1 5 10 15
Pro Val Phe Ser Ser Leu Leu Leu Cys Cys Leu Asn Leu Phe Cys Asn
20 25 30
Phe Val Leu Cys Lys Asn Ile Lys Phe Lys Ile Thr Asp Tyr Met Lys
35 40 45
Phe Ile Val Ser Ser Thr Ala Leu Phe Ser His Leu Gln Ala Val Ser
50 55 60
Arg Val Ile Asn Ser Lys Asn Ala Leu Pro Ile Leu Asp Cys Phe Leu
65 70 75 80
Phe Gln Leu Glu Asp Gly Thr Leu Ser Val Thr Val Ser Asp Ser Glu
85 90 95
Thr Thr Met Val Thr Ser Val Glu Val Asn Glu Ser Asp Ser Asn Gly
100 105 110
Lys Phe Ala Val Ala Ala Lys Thr Leu Leu Asp Ala Leu Lys Glu Ile
115 120 125
Pro Glu His Pro Leu Thr Leu Ile Ser Lys Pro Asp Thr Tyr Glu Ile
130 135 140
Thr Gly Thr Val Pro Glu Trp
145 150

<210> 6854  
 <211> 192  
 <212> PRT  
 <213> B.fragilis

<400> 6854
Ile Met Lys Leu Asn Asn Ile Lys Thr Gly Leu Leu Leu Ala Gly Leu
1 5 10 15
Leu Leu Leu Phe Gly Asn Val Lys Ala Gln Asp Asn Pro Phe Lys Pro
20 25 30
Glu Trp Phe Val Ser Gly Gly Ile Asn Gly Ile Thr Ala Leu Asn Gly
35 40 45
Ser Ala Asn Asn Ile Leu Gly Gly Lys Val Ser Gly Gly Val Trp Leu
50 55 60
Asn Lys Ile Ile Gly Leu Arg Val Asp Ala Glu Ala Gly Asn Val Trp
65 70 75 80
Leu Lys Gly Gly Tyr Asn Ala Val Thr Val Gly Ala Gly Ala Asp Ile
85 90 95
Leu Val Asn Leu Met Lys Asn Tyr Thr Asp Glu Asp Arg Lys Phe Arg
100 105 110

Leu Asn Ala Ile Phe Gly Leu Gly Tyr Asn Tyr Tyr Ser Phe Gly Asp  
           115                          120                          125  
 Asp Tyr Pro Arg Leu Ser Lys Thr Asn Thr Met Ser Gly Asn Phe Ser  
           130                          135                          140  
 Leu Gln Ala Ala Phe Arg Leu Asn Ser His Leu Ser Ile Phe Ala Glu  
 145                          150                          155                          160  
 Pro Gly Ile Lys Ile Ser Thr Lys Phe Tyr Asp Ile Glu Asn Lys Asp  
                           165                          170                          175  
 Asp Val Phe Ala Gly Gly Met Met Thr Val Gly Val Ile Tyr Lys Phe  
                           180                          185                          190

&lt;210&gt; 6855

&lt;211&gt; 228

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6855

Thr Gln Asn Ser Ile Lys Met Asn Val Thr Asp Asn Leu Lys Gln Val  
 1                          5                          10                          15  
 Leu Ala Glu Leu Pro Ser Gly Val Arg Leu Val Ala Val Ser Lys Phe  
                           20                          25                          30  
 His Pro Asn Glu Ala Ile Glu Glu Ala Tyr Arg Ala Gly Gln Arg Ile  
                           35                          40                          45  
 Phe Gly Glu Ser Lys Val Gln Glu Met Thr Gly Lys Tyr Glu Ser Leu  
                           50                          55                          60  
 Pro Lys Asp Ile Glu Trp His Phe Ile Gly His Leu Gln Thr Asn Lys  
 65                          70                          75                          80  
 Ile Lys Tyr Met Ala Pro Tyr Val Ser Met Ile His Gly Ile Asp Ser  
                           85                          90                          95  
 Tyr Lys Leu Leu Ala Glu Val Asn Lys Gln Ala Ile Lys Ala Glu Arg  
                           100                          105                          110  
 Val Ile Arg Cys Leu Leu Gln Ile His Ile Ala Gln Glu Glu Thr Lys  
                           115                          120                          125  
 Phe Gly Phe Ser Phe Asp Glu Cys Lys Glu Met Leu Asn Ala Ala Glu  
                           130                          135                          140  
 Trp Lys Ala Leu Ala Asn Ile Gln Ile Cys Gly Leu Met Gly Met Ala  
 145                          150                          155                          160  
 Thr Asn Thr Asp Ser Lys Glu Gln Ile Glu Arg Glu Phe Arg Ser Leu  
                           165                          170                          175  
 Asn Cys Phe Phe His Glu Val Lys Lys Gln Tyr Phe Ala Asn Glu Pro  
                           180                          185                          190  
 Thr Phe Cys Glu Leu Ser Met Gly Met Ser His Asp Tyr His Leu Ala  
                           195                          200                          205  
 Ile Lys Glu Gly Ser Thr Leu Val Arg Val Gly Ser Lys Ile Phe Gly  
                           210                          215                          220  
 Glu Arg Val Tyr  
 225

&lt;210&gt; 6856

&lt;211&gt; 347

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6856

Gln Lys Ser Arg Asn Asn His Met Tyr Lys Ala Pro Pro Arg Asp Ile  
 1                          5                          10                          15  
 Ser Ile Asp Ile Leu Lys Cys Ile Ala Ala Ile Met Ile Thr Asn Ser  
                           20                          25                          30  
 His Met Asp Ile Leu Tyr Gly Asp Tyr Ser Tyr Leu Ala Thr Gly Gly

35	40	45
Ala Ile Gly Asp Ala Leu Phe Phe Phe Cys Ser Gly Tyr Thr Leu Phe		
50	55	60
Leu Gly Arg Asp Met Asp Phe Phe Asn Trp Tyr Lys Arg Arg Ile Asn		
65	70	75
Arg Ile Tyr Pro Thr Val Phe Thr Trp Ala Leu Ile Ala Ala Val Phe		
85	90	95
Phe Asp Gln Arg Tyr Asp Met Pro Glu Ile Leu Ile Lys Gly Gly Gly		
100	105	110
Trp Phe Val Ser Cys Ile Met Ile Tyr Tyr Val Val Leu Trp Phe Ile		
115	120	125
Arg Lys Phe Leu Lys Lys His Leu Lys Trp Val Phe Phe Met Ala Ala		
130	135	140
Thr Ile Thr Leu Leu Trp Tyr Phe Val Leu Gly Phe Gly Glu Lys Ser		
145	150	155
Gly Asn Asn Met Tyr Gly Trp Asn Tyr Phe Lys Trp Cys Tyr Tyr Phe		
165	170	175
Leu Phe Met Leu Leu Gly Ser Met Met Gly Leu Lys Arg Asn Leu Asn		
180	185	190
Lys Lys Thr Tyr Pro Phe Phe Glu Gly Leu Tyr Asp Lys His Ile His		
195	200	205
Ile Ile Pro Ile Phe Leu Lys Leu Leu Ile Cys Ile Val Leu Phe Phe		
210	215	220
Gly Leu Cys Trp Phe Lys Cys Gln Thr Gly Ile Gly Trp Glu Leu Leu		
225	230	235
Gln Ile Ser Ser Leu Ile Pro Leu Leu Gly Thr Thr Tyr Tyr Phe Trp		
245	250	255
Arg Leu Ser Asn Thr Lys Leu Leu Thr Gln Ala Tyr His His His Leu		
260	265	270
Thr Gly Pro Ile Ile Arg Phe Ile Ser Gly Leu Cys Leu Glu Ile Tyr		
275	280	285
Leu Val Gln Tyr Asn Leu Phe Thr Asp Lys Leu Asn Asn Ile Phe Pro		
290	295	300
Leu Asn Leu Leu Val Ile Phe Ser Thr Ile Leu Val Thr Ala Tyr Leu		
305	310	315
Leu Arg Cys Leu Ser Arg Ile Trp Ser Gln Thr Phe Lys Asp Gly Asp		
325	330	335
Tyr Asp Trp Arg Asp Val Thr Lys Leu Tyr Ser		
340	345	

&lt;210&gt; 6857

&lt;211&gt; 316

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6857

Cys Val Cys Gly Leu Phe Pro Gly Val Cys Phe Val Asp Glu Leu Arg	
1	5
Gly Leu Ile Gly Ser Gly Arg Val Thr Ser Pro Tyr Leu His Ile Gly	
20	25
Gly Gly Ser Asn Leu Leu Phe Thr Lys Asp Tyr Glu Gly Thr Ile Leu	
35	40
His Ser Arg Ile Gly Gly Val Glu Val Val Ala Glu Thr Asp Asp Asp	
50	55
Ile Val Val Arg Val Gly Ala Gly Val Val Trp Asp Asp Phe Val Asp	
65	70
Tyr Cys Val Gln Arg His Trp Tyr Gly Val Glu Asn Leu Ser Leu Ile	
85	90
Pro Gly Glu Val Gly Ala Ser Ala Val Gln Asn Ile Gly Ala Tyr Gly	

Val	Glu	Val	Lys	Asp	Leu	Ile	Val	Arg	Val	Glu	Thr	Leu	Asn	Ile	Glu
		115							120				125		
Gly	Lys	Glu	His	Val	Tyr	Asp	Val	Thr	Glu	Cys	Gly	Tyr	Ser	Tyr	Arg
		130				135					140				
Asp	Ser	Ile	Phe	Lys	Arg	Pro	Glu	Asn	Lys	Ser	Val	Phe	Val	Thr	Tyr
145					150					155					160
Val	Ser	Phe	Arg	Leu	Ser	Lys	Arg	Glu	His	Tyr	Thr	Leu	Asp	Tyr	Gly
				165						170				175	
Thr	Ile	Arg	Arg	Glu	Leu	Glu	Lys	Tyr	Pro	Gly	Val	Thr	Leu	Asp	Val
			180						185				190		
Val	Arg	Arg	Val	Ile	Ile	Ala	Ile	Arg	Glu	Glu	Lys	Leu	Pro	Asp	Pro
		195					200					205			
Arg	Val	Met	Gly	Asn	Ala	Gly	Ser	Phe	Phe	Met	Asn	Pro	Ile	Val	Gly
	210					215					220				
Arg	Glu	Gln	Phe	Glu	Ala	Leu	Gln	Ala	Glu	Tyr	Pro	Gln	Met	Pro	Phe
225					230					235					240
Tyr	Glu	Ile	Asp	Thr	Asp	Arg	Val	Lys	Ile	Pro	Ala	Gly	Trp	Met	Ile
				245					250					255	
Asp	Leu	Cys	Gly	Trp	Lys	Gly	Lys	Ala	Leu	Gly	Pro	Ala	Ala	Val	His
		260					265						270		
Asp	Lys	Gln	Ala	Leu	Val	Leu	Val	Asn	Arg	Gly	Gly	Ala	Lys	Gly	Ala
	275						280					285			
Asp	Val	Ile	Ala	Leu	Ser	Asp	Ala	Val	Arg	Ala	Ser	Val	Arg	Ala	Lys
	290					295					300				
Phe	Gly	Ile	Asp	Ile	His	Pro	Glu	Val	Asn	Phe	Ile				
305					310					315					

&lt;210&gt; 6858

&lt;211&gt; 300

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6858

Ser	Arg	Phe	Met	Gln	Thr	Glu	Asn	Phe	Thr	Leu	Gly	Lys	Lys	Glu	Leu
1			5						10					15	
Leu	Ile	Leu	Leu	Gly	Leu	Thr	Leu	Val	Leu	Pro	Phe	Pro	Ile	Asn	Trp
		20						25					30		
Ala	Leu	Ile	Glu	Leu	Asn	Pro	Leu	Thr	Leu	Met	Ala	Gly	Ala	Asp	Asp
		35					40					45			
Val	Pro	Thr	Trp	Ile	Gly	Phe	Gly	Gly	Ser	Tyr	Ile	Gly	Gly	Ile	Ile
	50				55						60				
Gly	Gly	Ile	Ile	Ser	Ile	Met	Ile	Leu	Asn	Lys	Thr	Leu	Gln	Gln	Thr
65				70					75					80	
Gly	Val	Leu	His	His	Asp	Leu	Lys	Leu	Leu	Gln	Leu	Asp	Thr	Ile	Ile
			85						90					95	
Tyr	Thr	Gln	Gln	Gln	Asp	Trp	Phe	Thr	Gly	Phe	Lys	Gln	Glu	Leu	Ala
		100					105						110		
Glu	Asn	Leu	Lys	Ser	Ile	Asp	Leu	Tyr	Val	Leu	Asn	Thr	Val	Val	Ser
	115					120						125			
Ser	Ile	Ser	Met	Lys	Asn	Tyr	Ala	Tyr	Ala	Lys	Glu	Val	Leu	Thr	Glu
	130					135					140				
Ile	Asn	Lys	Gly	Leu	Glu	Tyr	Gln	Met	Val	Ala	Ala	Ser	Phe	Ser	Phe
145					150					155					160
Thr	Ser	Thr	His	Leu	Ser	Ser	Glu	Glu	Lys	Lys	Tyr	Met	Asn	Leu	Val
			165						170					175	
Arg	Arg	Val	Gln	Thr	Glu	Tyr	Ser	Ser	Phe	Ile	Lys	Asp	Ile	Leu	Tyr
		180						185					190		
Tyr	Ile	Pro	Leu	Ala	Glu	Thr	Ile	Ser	Ser	Arg	Lys	Lys	Leu	Asn	Tyr

195	200	205
Asp Gln Leu Met Asp Tyr Thr	Leu Ser Gln Tyr Asp Tyr Leu Gln Gly	
210	215	220
Gln Glu Gly Glu Ser Thr Ala	Ser Gly Ala Ile Ile Pro Arg Val Met	
225	230	235
Glu Ile Asp Pro Ser Asp Asp	Ile Arg Lys Glu Leu Glu Arg Ile Met	240
	245	250
Glu Glu Arg Leu Thr Gly Arg Thr	Tyr Leu Tyr His Leu Lys Ser Asp	255
	260	265
Leu Ala Glu Ala Thr His Gln	Leu Ile Ile Tyr Glu Glu Asn Arg Ile	270
	275	280
Asn Ser Ile Leu His Lys Pro	Glu Arg Glu Met Asn	285
290	295	300

<210> 6859  
 <211> 133  
 <212> PRT  
 <213> B.fragilis

<400> 6859

Ile Leu Ile Ile Asn Glu Ser Asn Lys Met Lys Lys Val Ile Cys Ser	
1	5 10 15
Glu Lys Ala Pro Gly Ala Ile Gly Pro Tyr Ser Gln Ala Ile Glu Ala	
	20 25 30
Asn Gly Met Val Phe Val Ser Gly Gln Leu Pro Ile Asp Ala Ala Thr	
	35 40 45
Gly Val Met Pro Asp Gly Val Glu Ala Gln Ala Arg Gln Ser Leu Glu	
	50 55 60
Asn Ile Lys His Ile Leu Glu Ala Ala Gly Leu Thr Met Ala Asp Ile	
65	70 75 80
Val Lys Thr Thr Val Phe Leu Gln Asp Met Ser Leu Phe Ala Gly Met	
	85 90 95
Asn Gly Val Tyr Ala Thr Tyr Phe Asp Gly Ala Phe Pro Ala Arg Ser	
	100 105 110
Ala Val Ala Val Lys Ala Leu Pro Lys Asp Ala Leu Val Glu Ile Glu	
	115 120 125
Cys Ile Ala Ala Arg	
130	

<210> 6860  
 <211> 294  
 <212> PRT  
 <213> B.fragilis

<400> 6860

Lys Thr Ile Ile Met Ala Val Asp Lys Thr Pro Ser Gln Val Ala Thr	
1	5 10 15
Ser Ala Leu Gln Ala Ile Pro Phe Gly Ser Ile Ile Gly Gly Pro Leu	
	20 25 30
Lys Ala Cys Val Glu Ala Gln Ala Leu Ala Ala Lys Thr Thr Trp Glu	
	35 40 45
Phe Ile Gln Asn Val Gly Ile Asn Val Asn Pro Glu Thr Gly Glu Lys	
	50 55 60
Thr Ala Val Asn Val Ser Phe Ser Phe Ile Gln Gly Gly Arg Leu Val	
65	70 75 80
Gln Leu Asn Ile Pro Leu Leu Thr Ile Val Pro Ile Pro Tyr Ile Ala	
	85 90 95
Ile Arg Glu Val Asp Ile Asn Phe Lys Ala Asn Ile Ser Ala Ser Ser	
	100 105 110

Ser Thr Thr Ala Glu Thr Asn Glu Ser Val Ser Lys Asp Ala Ala Leu  
 115 120 125  
 Lys Ala Ser Ala Ser Met Arg Phe Gly Cys Phe Lys Met Asn Ala Asp  
 130 135 140  
 Met Asn Ala Ser Tyr Ser Ser Lys Lys Asp Ser Lys Ala Thr Ser Asp  
 145 150 155 160  
 Ser Lys Tyr Ser Val Glu Tyr Thr Met Asp Val Ala Val Lys Ala Gly  
 165 170 175  
 Gln Asp Ser Met Pro Ala Gly Leu Ser Lys Ile Leu Glu Leu Leu Gly  
 180 185 190  
 Asn Ser Leu Asp Val Ser Asp Pro Ala Gly Thr Leu Glu Val Asn Ser  
 195 200 205  
 Asn Leu Leu Leu Ile Glu Asn Gly Lys Glu Thr Val Arg Leu Ile Ala  
 210 215 220  
 Thr Tyr Lys Asp Gly Ser Gly Leu Leu Ala Pro Asp Lys Leu Thr Ile  
 225 230 235 240  
 Thr Gly Thr Gly Ala Asn Ala Ala Asp Phe Lys Val Ser Gly Asp Ser  
 245 250 255  
 Lys Ile Ile Asp Leu Pro Glu Gly Thr Tyr Thr Ile Lys Ala Glu Gly  
 260 265 270  
 Ser Lys Lys Glu Val Ile Val Glu Val Lys Lys Asp Thr Ala Thr Pro  
 275 280 285  
 Gln Glu Glu Val Thr Glu  
 290

<210> 6861  
 <211> 88  
 <212> PRT  
 <213> B.fragilis

<400> 6861  
 Phe Asn Tyr Met Glu Asn Leu Glu Thr Ala Leu Leu Leu Met Val Val  
 1 5 10 15  
 Gly Met Ala Thr Val Phe Ala Ile Leu Leu Ile Val Ile Tyr Leu Gly  
 20 25 30  
 Lys Leu Leu Ile Ser Leu Val Asn Lys Tyr Ala Pro Glu Glu Gln Leu  
 35 40 45  
 Pro Ala Lys Gln Gly Thr Gln Ser Pro Val Pro Ile Pro Gly Asn Ile  
 50 55 60  
 Val Ala Thr Ile Thr Ala Ala Val Asn Val Val Thr Gln Gly Lys Gly  
 65 70 75 80  
 Lys Val Ala Lys Ile Glu Lys Ile  
 85

<210> 6862  
 <211> 392  
 <212> PRT  
 <213> B.fragilis

<400> 6862  
 Gln Lys Asn Ile Gln Met Lys Ile Gly Ile Ile Thr Ile Cys Lys Val  
 1 5 10 15  
 Asn Asn Tyr Gly Ala Glu Leu Gln Ala Phe Ala Thr Gln Lys Lys Leu  
 20 25 30  
 Glu Gln Met Gly His Asn Ala Glu Ile Ile Asn Tyr Leu Tyr Tyr Lys  
 35 40 45  
 Asp Trp His Phe Lys Asp Thr Pro Leu Ser Gln Pro Phe Val Pro Leu  
 50 55 60  
 Asp Met Lys Gly Lys Leu Ser Tyr Trp Ile Lys Tyr Arg Leu Met Ser

65	70	75	80
Trp Val Val Asn Lys Val Leu Pro Ile Phe Asn Gly Asn Met Arg Arg			
	85	90	95
Arg Leu His Asn Tyr Gln Ser Phe Ile Asp Ser Glu Arg Phe Ser Ala			
	100	105	110
Gln Tyr Lys Ser Met Asp Glu Leu Tyr Lys Thr Tyr Pro Lys Tyr Asp			
	115	120	125
Ile Tyr Met Val Gly Ser Asp Gln Val Trp Asn Pro Ser Ala Ser Ser			
	130	135	140
Ser Ile Glu Pro Tyr Phe Leu Thr Phe Ala Pro Lys Asn Ala Pro Lys			
145	150	155	160
Val Thr Tyr Ala Ser Ser Phe Gly Val Ala Ser Ile Ala Pro Asn Leu			
	165	170	175
Ser Lys Arg Tyr Ala Lys Leu Leu Asn Asn Leu Asp Thr Ile Ala Val			
	180	185	190
Arg Glu Gln Ser Gly Val Glu Leu Val Lys Gln Leu Thr Gly Arg Glu			
	195	200	205
Ala Lys Leu Val Val Asp Pro Thr Leu Leu Leu Ser Lys Ala Asp Trp			
	210	215	220
Glu Pro Tyr Met Lys Pro Leu Ala Lys Ile Ser Thr Gln Tyr Ile Leu			
225	230	235	240
Ile Tyr Gln Leu Phe Pro Ser Gln Thr Val Ile Asp Val Ala Leu Lys			
	245	250	255
Ile Gly Lys Glu Lys Asn Leu Pro Val Tyr Asn Ile Cys Lys Arg Ala			
	260	265	270
Tyr Gly Met Lys Lys Ile Val Gly Ile Asn Asn Ile Leu Asp Ala Gly			
	275	280	285
Pro Ser Glu Phe Leu Trp Leu Ile Ala Asn Ala Thr Cys Met Val Thr			
	290	295	300
Asn Ser Phe His Gly Thr Ala Phe Ser Val Asn Phe Ala Thr Pro Phe			
305	310	315	320
Cys Cys Val Leu Asn Arg Lys Arg Lys Asn Asn Gly Arg Met Ile Ser			
	325	330	335
Phe Leu Asp Lys Val Asp Met Ser Asn Arg Ile Leu Tyr Glu Asp Ser			
	340	345	350
Ile Ala Glu Leu Asn Val Met Thr Ala Cys Ser Glu Val Thr Asn Asn			
	355	360	365
His Leu Arg Leu Leu Val Asn Asn Ser Ile Asp Tyr Leu Lys Ser Ile			
	370	375	380
Ile Glu Asn Lys Glu Gln Lys Cys			
385	390		

<210> 6863  
 <211> 191  
 <212> PRT  
 <213> B.fragilis

<400> 6863  
 His Lys Asn Ile Met Ile Gln Ser Lys Lys Asp Leu Lys Tyr Tyr Leu  
 1 5 10 15  
 Ser Glu Asp Leu Lys Arg Phe Asn Asn His Lys Pro Asn Ile Lys Asp  
 20 25 30  
 Trp Leu Leu His Asn Glu Ile Trp Tyr Ile Phe His Tyr Ile Arg His  
 35 40 45  
 Leu Arg Tyr Val Glu Tyr Tyr Lys Asn Thr Asn Lys Asn Lys Ile Leu  
 50 55 60  
 Phe Phe Tyr His Phe Phe Arg Tyr Lys Arg Leu Gly Phe Lys Leu Lys  
 65 70 75 80  
 Ile Thr Ile Tyr Pro Asn Thr Ile Gly Ala Gly Leu Arg Ile Tyr His

				85				90					95				
Val	Gly	Asp	Phe	Ile	His	Ile	Gly	Ala	Gln	Cys	His	Ile	Gly	His	Asn		
			100					105					110				
Cys	Thr	Leu	Leu	Pro	Gly	Val	Val	Phe	Gly	Asn	Lys	Tyr	Glu	Lys	Ala		
		115					120						125				
Thr	Asp	Thr	Gln	Ile	Ile	Ala	Gly	Asn	Asn	Cys	Tyr	Phe	Gly	Leu	Gly		
	130					135					140						
Ala	Lys	Ile	Phe	Gly	Ser	Ile	Ile	Ile	Gly	Asn	Asn	Val	Thr	Ile	Gly		
145					150					155					160		
Ala	Asn	Ala	Val	Val	Thr	Lys	Asp	Ile	Pro	Asp	Asn	Ala	Ile	Val	Gly		
				165					170						175		
Gly	Ile	Pro	Ala	Lys	Val	Leu	Arg	Phe	Lys	Glu	Ile	Asn	Ile	Leu			
			180					185						190			

&lt;210&gt; 6864

&lt;211&gt; 194

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6864

Arg	Arg	Cys	Ile	Arg	Ile	Lys	Arg	Ile	Thr	Asn	Met	Lys	Lys	Ile	Lys		
1			5					10						15			
Thr	Ala	Phe	Ala	Leu	Pro	Leu	Phe	Trp	Leu	Leu	Phe	Lys	Val	Ser	Lys		
		20						25					30				
Asp	Met	His	Lys	Ile	Gln	Val	Asp	Gly	Gln	Ala	Trp	Cys	Gln	Trp	Gln		
		35				40						45					
His	Lys	Asn	Phe	Thr	Leu	Trp	Asn	Met	Cys	Ser	Leu	Phe	Ile	Gly	Phe		
	50					55					60						
Lys	Glu	Phe	Arg	Asn	Leu	Phe	Tyr	Tyr	Arg	Ile	Gly	Tyr	Leu	His	His		
65					70				75						80		
Leu	Ile	Glu	Trp	Ile	Phe	Pro	Arg	Met	Thr	Asn	Leu	Tyr	Ile	Thr	Thr		
				85				90						95			
Pro	Arg	Ser	Asp	Val	Asp	Ser	Gly	Leu	Ile	Ile	Gln	His	Gly	Phe	Ala		
			100				105							110			
Thr	Ile	Ile	Ser	Ala	Lys	Gln	Ile	Gly	Lys	Asn	Cys	Lys	Ile	Tyr	Gln		
	115					120						125					
Gln	Val	Thr	Ile	Gly	Tyr	Asp	His	Thr	Leu	Gln	Ala	Pro	Ile	Ile	Gly		
	130					135					140						
Asp	Asn	Val	Glu	Ile	Cys	Cys	Gly	Ala	Lys	Val	Ile	Gly	Gly	Val	Thr		
145					150					155					160		
Ile	Gly	Asn	Asn	Val	Ile	Ile	Gly	Ala	Asn	Ala	Val	Val	Ile	Lys	Asp		
				165				170						175			
Val	Pro	Asn	Asn	Cys	Ile	Val	Ala	Gly	Val	Pro	Ala	Lys	Ile	Ile	Lys		
			180					185						190			

Lys Ile

&lt;210&gt; 6865

&lt;211&gt; 536

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6865

Thr	Cys	Ile	Met	Ile	Lys	Leu	Asn	Glu	Asn	Ile	Ile	Arg	Trp	Ile	Ile		
1				5				10						15			
Ala	Val	Pro	Cys	Ile	Leu	Leu	Thr	Val	Cys	Leu	Val	Leu	Tyr	Arg	Ala		
		20						25					30				
Tyr	Arg	His	Ser	Ala	Ser	Asp	Arg	Glu	Arg	Leu	Ala	Leu	Ser	Leu	Glu		
		35					40						45				



Glu	Phe	Arg	Asp	Lys	Glu	Lys	Lys	Ser	Val	Leu	Ile	Gln	Arg	Val	Ser
50						55					60				
Gln	Gln	Met	Glu	Glu	Ile	Ala	Tyr	Gln	Gln	Lys	Asp	Ile	Ser	Glu	Lys
65					70					75					80
Arg	Arg	Gln	Glu	Ala	Val	Ala	Gln	Thr	Gln	Lys	Ala	Asn	Arg	Met	Gln
				85					90					95	
Gln	Gln	Ala	Glu	Leu	Ala	Arg	Glu	Arg	Ala	Leu	Ala	Ala	Gln	Leu	Glu
			100					105					110		
Ala	Glu	Lys	Ala	Tyr	Arg	Met	Ala	Asp	Glu	Gln	Lys	Asn	Leu	Ala	Met
		115					120					125			
Glu	Arg	Gln	Leu	Gln	Ala	Glu	Gln	Ser	Lys	Arg	Val	Ala	Asp	Thr	Leu
130						135					140				
Ala	Phe	Leu	Ala	Leu	Gly	Arg	Ser	Leu	Gly	Thr	Leu	Ser	Val	Thr	Gln
145					150					155					160
Tyr	Arg	Ser	Gly	Asn	Met	Glu	Leu	Ala	Ser	Leu	Leu	Ala	Tyr	Thr	Ala
				165					170					175	
Trp	Trp	Phe	Thr	Lys	Arg	Tyr	Asp	Gly	Asp	Val	Tyr	His	Pro	Ala	Val
			180					185					190		
Phe	Asn	Ala	Leu	Ser	Leu	Ser	Cys	Arg	Gln	Asp	Gln	Leu	Trp	Phe	Gly
	195						200					205			
His	Lys	Gly	Ala	Val	Thr	Gly	Ile	Lys	Leu	Leu	Ser	Glu	Gly	Glu	Glu
210						215					220				
Lys	Ala	Arg	Ala	Gly	Arg	Asn	Pro	Leu	Pro	Gly	Leu	Val	Thr	Val	Gly
225					230					235					240
Lys	Tyr	Gly	Glu	Met	Ile	Arg	Trp	Lys	Ser	Glu	Asn	Gly	Gln	Thr	Tyr
				245					250					255	
Thr	Ser	Glu	Leu	Leu	Leu	Asn	Asp	Pro	Cys	Tyr	Asp	Phe	Arg	Asp	Val
			260					265					270		
Leu	Leu	Arg	Ser	Asp	Ser	Gln	Met	Tyr	Ala	Leu	Ser	Tyr	Cys	Gly	Gln
		275					280					285			
Leu	Ile	Ser	Thr	Asp	Ser	Ala	Gly	Ile	Val	Thr	Arg	Phe	Leu	Pro	Lys
290						295					300				
Gly	Glu	Tyr	Arg	Gln	Leu	Ile	Ser	Ile	Ala	Ser	Asn	Leu	Val	Leu	Ala
305					310					315					320
Val	Ser	Thr	Thr	Gly	Ile	Tyr	Ser	Phe	Asp	Cys	Val	Asn	His	Glu	Ile
				325					330					335	
Gln	Pro	Tyr	Phe	Gln	Pro	Glu	His	Ser	Ile	Thr	Cys	Val	Gly	Gln	Met
		340						345					350		
Glu	Gly	Tyr	Leu	Tyr	Val	Phe	Phe	Lys	Asn	Gly	Thr	Val	Ala	Leu	Leu
		355					360				365				
Ser	Ser	Asp	Gly	Thr	Phe	Leu	Arg	Phe	Ile	Asp	Ser	Leu	Pro	Glu	Asn
370						375					380				
Ser	Val	Val	Thr	Ala	Phe	Cys	Pro	Leu	Thr	Asn	Glu	Arg	Tyr	Ala	Ile
385					390					395					400
Gly	Cys	Arg	Glu	Gly	Val	Ile	Leu	Ile	Cys	Asp	Lys	Asn	Gly	Asn	Ile
				405					410					415	
Arg	Gln	Lys	Leu	Ile	Gly	His	Gln	Ala	Ala	Val	Thr	Ala	Ile	Ser	Arg
			420					425					430		
Lys	Gly	Asn	Lys	Leu	Phe	Ser	Ser	Ser	Tyr	Asp	Cys	Thr	Leu	Arg	Leu
		435					440					445			
Trp	Asp	Leu	Arg	Lys	Gly	Lys	Thr	Glu	Ser	Ala	Val	Ile	Val	Thr	Ser
450						455					460				
Pro	Gly	Trp	Ile	His	Thr	Phe	Cys	Phe	His	Pro	Asp	Gly	Thr	Ser	Val
465					470					475					480
Phe	Ile	Gly	Asp	Glu	Gln	Gly	Arg	Leu	Tyr	Arg	Val	Pro	Val	Ser	Pro
				485					490					495	
Asp	His	Met	Ala	Thr	Val	Val	Arg	Gln	Gly	Leu	Gln	Arg	Asp	Phe	Thr
		500						505					510		
Arg	Glu	Glu	Trp	Glu	Tyr	Tyr	Ile	Gly	Lys	Gln	Ile	Pro	Phe	Glu	Ser

515 520 525  
 Tyr Tyr Leu Lys Thr Tyr Gln Pro  
 530 535

<210> 6866  
 <211> 225  
 <212> PRT  
 <213> B.fragilis

<400> 6866

Leu Phe Leu Ile Asn Gly Lys Val Leu Met Arg Phe Ile Leu Phe Ile  
 1 5 10 15  
 Ile Phe Ser Leu Cys Leu Pro Leu Val Met Gln Gly Gln Glu Gln Asn  
 20 25 30  
 Val Trp Thr Gln Asn Asp Ser Leu Lys Leu Lys Lys Ile Leu Val Gly  
 35 40 45  
 Gln Ala Glu Ile Arg Ile Asn Arg Glu Ala Leu Arg Glu Leu Asp Arg  
 50 55 60  
 Ala Phe Ser Ser Pro Arg Arg Leu Phe Lys Ser Gln Ser Arg Ser Ala  
 65 70 75 80  
 Ile Leu Leu Ile Lys Asp Phe Leu Leu Tyr Arg Pro Asn Val Phe Thr  
 85 90 95  
 Gly Lys Tyr His Ile Ser Thr Phe Lys Val Asn Glu Leu Asn Ile Arg  
 100 105 110  
 Gln Asp Ser Leu Phe Met Asn Val His Met Leu Gly Asn Lys Gln Leu  
 115 120 125  
 Phe Val Lys Ser Gln Leu Asp Ile Gly Asp Pro Arg Val Leu Ile Lys  
 130 135 140  
 Arg Lys Thr Asp Ile Gln Phe Lys Phe Thr Asp His Leu Ala Tyr Arg  
 145 150 155 160  
 Val Tyr Gly Gly Tyr Thr Ile Asp Lys Asn Arg Thr Ile Ile Leu Pro  
 165 170 175  
 Thr Thr Ala Thr Pro Tyr Tyr Val Gly Thr Gly Phe Ser Tyr Ser Leu  
 180 185 190  
 Asn Lys Lys Leu Gln Leu Lys Thr Gly Ile Glu Tyr Gln Tyr Asn Val  
 195 200 205  
 Ile Tyr Lys Arg Trp Glu Trp Val Trp Asn Ser Gly Ile Arg Phe Asn  
 210 215 220  
 Phe  
 225

<210> 6867  
 <211> 813  
 <212> PRT  
 <213> B.fragilis

<400> 6867

Ile Lys Leu Ile Met Lys Thr Asn Ile Gln Glu Asn Leu Ser Arg Ser  
 1 5 10 15  
 Leu Ser Thr Trp Gly Asp Lys Pro Ala Val Val Ala Lys Asp Gly Thr  
 20 25 30  
 Val Ser Tyr Gln Met Leu Glu Arg Tyr Ser Ala Asn Ile Ala Gln Ser  
 35 40 45  
 Ile Arg Gln Arg Leu Ser Val Thr Asp Pro Ser Gly Leu Arg Asn Ile  
 50 55 60  
 Cys Ile Gly Val Cys Met Glu Arg Asn Lys Thr Leu Val Pro Ala Ile  
 65 70 75 80  
 Leu Ala Ile Phe Arg Leu Gly Ala Thr Tyr Leu Pro Ile Asp Pro Ser  
 85 90 95

Leu Pro Asp Asn Arg Lys Arg Tyr Met Ala Glu Asn Ala Asp Met Val  
 100 105 110  
 Leu Leu Leu Thr Asp Ser Ser Asn Glu Val Gly Gly Ile Pro Ser Val  
 115 120 125  
 Arg Gln Leu Tyr Leu Asn Gly Glu Gln Leu Ser Glu Pro Val Val Gly  
 130 135 140  
 Asp Tyr Thr Glu Val Leu Pro Asp Asp Cys Ala Tyr Ile Ile Tyr Thr  
 145 150 155 160  
 Ser Gly Thr Thr Gly Asn Pro Lys Gly Val Arg Ile Ser Tyr Arg Asn  
 165 170 175  
 Leu Asp Thr Phe Thr Arg Asn Leu Ile Asp Lys Lys Leu Tyr His Leu  
 180 185 190  
 Ser Asp Pro Ala Asn Arg Tyr Leu Ala Phe Ala Ser Ile Ser Phe Asp  
 195 200 205  
 Ala Ser Ile Leu Glu Leu Met Met Cys Ile Pro Ala Gly Gly Thr Leu  
 210 215 220  
 Ile Leu Ala Gly Glu Asp Glu Arg Arg Asp Ile Ser Leu Leu Asp Glu  
 225 230 235 240  
 Leu Ile Arg Arg Glu Lys Val Asn Ile Ala Phe Phe Pro Pro Ser Leu  
 245 250 255  
 Leu Gly Met Phe Ala Asp Leu Asp Phe Pro Ser Phe Lys Thr Leu Leu  
 260 265 270  
 Phe Gly Ala Glu Ala Ile Gly Glu Lys Leu Phe Asn Arg Leu Lys Gln  
 275 280 285  
 Gln Pro Tyr Arg Leu Met Asn Val Tyr Gly Pro Thr Glu Asn Thr Val  
 290 295 300  
 Leu Ser Thr Ile Arg Ile Val Gly Lys Asp Thr Ser Tyr Asp Asp Ile  
 305 310 315 320  
 Gly Tyr Pro Leu Lys Gly Thr Val Cys Tyr Val Leu Ser Glu Asn Leu  
 325 330 335  
 Gln Gln Thr Thr Leu Gly Ala Thr Gly Glu Leu Cys Leu Gly Gly Pro  
 340 345 350  
 Gln Val Ser Leu Gly Tyr Ile Gly Ser Val Gln Leu Asn Glu Lys Ser  
 355 360 365  
 Phe Ile Ser Tyr Asp Gly Glu Arg Leu Tyr Arg Thr Gly Asp Leu Val  
 370 375 380  
 Gln Gln Gln Pro Asp Gly Ser Ile Arg Phe Ile Gly Arg Lys Asp Thr  
 385 390 395 400  
 Gln Val Lys Ile Arg Gly Phe Arg Ile Glu Leu Thr Glu Ile Ala Glu  
 405 410 415  
 Arg Leu Asn Arg Asp Pro Asp Val Glu Arg Ala His Val Val Val  
 420 425 430  
 Glu Arg Asn Gly Arg Gln Leu Leu Gly Ala Tyr Leu Gln Pro Ser Val  
 435 440 445  
 Ser Gly Asn Phe His Pro Glu Glu Val Lys Glu Arg Leu Arg Ala Glu  
 450 455 460  
 Leu Pro Tyr Tyr Met Ile Pro Asn Leu Trp Gln Val Val Asp His Phe  
 465 470 475 480  
 Gln Arg Thr Ile Asn Asp Lys Ile Asp Val Arg Val Leu Pro Ala Phe  
 485 490 495  
 Thr Ser Leu Glu Leu Lys Tyr Val Pro Pro Val His Pro Gly Glu Val  
 500 505 510  
 Ile Leu Cys Gly Ile Leu Lys Glu Met Leu Gly Leu Pro Gln Val Ser  
 515 520 525  
 Val Glu Ala Asp Leu Ile Asp Leu Gly Leu Thr Ser Leu Asp Met  
 530 535 540  
 Leu Arg Leu Val Thr Glu Ala Asn Lys Lys Gly Cys Pro Ile Asn Val  
 545 550 555 560  
 Ser Ala Val Tyr Thr Ala Arg Asn Leu Arg Arg Leu Leu Leu Val Pro

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100																																																																																																																																																																																																		
Birth rate	15.0	14.8	14.6	14.4	14.2	14.0	13.8	13.6	13.4	13.2	13.0	12.8	12.6	12.4	12.2	12.0	11.8	11.6	11.4	11.2	11.0	10.8	10.6	10.4	10.2	10.0	9.8	9.6	9.4	9.2	9.0	8.8	8.6	8.4	8.2	8.0	7.8	7.6	7.4	7.2	7.0	6.8	6.6	6.4	6.2	6.0	5.8	5.6	5.4	5.2	5.0	4.8	4.6	4.4	4.2	4.0	3.8	3.6	3.4	3.2	3.0	2.8	2.6	2.4	2.2	2.0	1.8	1.6	1.4	1.2	1.0	0.8	0.6	0.4	0.2	0.0	-0.2	-0.4	-0.6	-0.8	-1.0	-1.2	-1.4	-1.6	-1.8	-2.0	-2.2	-2.4	-2.6	-2.8	-3.0	-3.2	-3.4	-3.6	-3.8	-4.0	-4.2	-4.4	-4.6	-4.8	-5.0	-5.2	-5.4	-5.6	-5.8	-6.0	-6.2	-6.4	-6.6	-6.8	-7.0	-7.2	-7.4	-7.6	-7.8	-8.0	-8.2	-8.4	-8.6	-8.8	-9.0	-9.2	-9.4	-9.6	-9.8	-10.0	-10.2	-10.4	-10.6	-10.8	-11.0	-11.2	-11.4	-11.6	-11.8	-12.0	-12.2	-12.4	-12.6	-12.8	-13.0	-13.2	-13.4	-13.6	-13.8	-14.0	-14.2	-14.4	-14.6	-14.8	-15.0	-15.2	-15.4	-15.6	-15.8	-16.0	-16.2	-16.4	-16.6	-16.8	-17.0	-17.2	-17.4	-17.6	-17.8	-18.0	-18.2	-18.4	-18.6	-18.8	-19.0	-19.2	-19.4	-19.6	-19.8	-20.0	-20.2	-20.4	-20.6	-20.8	-21.0	-21.2	-21.4	-21.6	-21.8	-22.0	-22.2	-22.4	-22.6	-22.8	-23.0	-23.2	-23.4	-23.6	-23.8	-24.0	-24.2	-24.4	-24.6	-24.8	-25.0	-25.2	-25.4	-25.6	-25.8	-26.0	-26.2	-26.4	-26.6	-26.8	-27.0	-27.2	-27.4	-27.6	-27.8	-28.0	-28.2	-28.4	-28.6	-28.8	-29.0	-29.2	-29.4	-29.6	-29.8	-30.0	-30.2	-30.4	-30.6	-30.8	-31.0	-31.2	-31.4	-31.6	-31.8	-32.0	-32.2	-32.4	-32.6	-32.8	-33.0	-33.2	-33.4	-33.6	-33.8	-34.0	-34.2	-34.4	-34.6	-34.8	-35.0	-35.2	-35.4	-35.6	-35.8	-36.0	-36.2	-36.4	-36.6	-36.8	-37.0	-37.2	-37.4	-37.6	-37.8	-38.0	-38.2	-38.4	-38.6	-38.8	-39.0	-39.2	-39.4	-39.6	-39.8	-40.0	-40.2	-40.4	-40.6	-40.8	-41.0	-41.2	-41.4	-41.6	-41.8	-42.0	-42.2	-42.4	-42.6	-42.8	-43.0	-43.2	-43.4	-43.6	-43.8	-44.0	-44.2	-44.4	-44.6	-44.8	-45.0	-45.2	-45.4	-45.6	-45

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	

2000

```
<210> 6869
<211> 206
<212> PRT
<213> B.fragilis
```

Hand 1	Hand 2	Hand 3	Hand 4	Hand 5	Hand 6	Hand 7	Hand 8	Hand 9	Hand 10	Hand 11	Hand 12	Hand 13	Hand 14	Hand 15	Hand 16	Hand 17	Hand 18	Hand 19	Hand 20	Hand 21	Hand 22	Hand 23	Hand 24	Hand 25	Hand 26	Hand 27	Hand 28	Hand 29	Hand 30	Hand 31	Hand 32	Hand 33	Hand 34	Hand 35	Hand 36	Hand 37	Hand 38	Hand 39	Hand 40	Hand 41	Hand 42	Hand 43	Hand 44	Hand 45	Hand 46	Hand 47	Hand 48	Hand 49	Hand 50	Hand 51	Hand 52	Hand 53	Hand 54	Hand 55	Hand 56	Hand 57	Hand 58	Hand 59	Hand 60	Hand 61	Hand 62	Hand 63	Hand 64	Hand 65	Hand 66	Hand 67	Hand 68	Hand 69	Hand 70	Hand 71	Hand 72	Hand 73	Hand 74	Hand 75	Hand 76	Hand 77	Hand 78	Hand 79	Hand 80	Hand 81	Hand 82	Hand 83	Hand 84	Hand 85	Hand 86	Hand 87	Hand 88	Hand 89	Hand 90	Hand 91	Hand 92	Hand 93	Hand 94	Hand 95	Hand 96	Hand 97	Hand 98	Hand 99	Hand 100
--------	--------	--------	--------	--------	--------	--------	--------	--------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	----------

```
<210> 6870
<211> 409
<212> PRT
<213> B.fragilis
```

<400> 6870															
Arg	Thr	Lys	Met	Leu	Ser	Ile	Leu	Ile	Asn	Ala	Tyr	Ala	Cys	Ser	Pro
1				5					10					15	
Asn	Met	Gly	Ser	Glu	Pro	Gly	Met	Ala	Trp	Asn	Trp	Cys	Ile	Asn	Leu
			20					25					30		
Ala	Arg	His	Cys	Glu	Leu	Tyr	Ile	Ile	Thr	Glu	Gly	Glu	Phe	Arg	Asp
		35					40					45			
Lys	Ile	Glu	Ala	Val	Leu	Pro	Thr	Leu	Pro	Gln	Gly	Lys	His	Met	His
	50					55					60				
Phe	Tyr	Tyr	Asn	Pro	Val	Ser	Glu	Glu	Val	Arg	Lys	Met	Cys	Trp	Asn
65					70					75					80

Gln Gly Asp Trp Arg Phe Tyr Lys His Tyr Lys Lys Trp Gln Trp Lys  
 85 90 95  
 Thr Tyr Glu Met Ala Gln Glu Ile Ile Val Lys Gln His Ile Asp Ile  
 100 105 110  
 Val His Gln Leu Asn Met Ile Gly Phe Arg Glu Pro Gly Tyr Leu Trp  
 115 120 125  
 Lys Leu Asp Lys Pro Phe Val Trp Gly Pro Val Asp Ala Lys Glu Lys  
 130 135 140  
 Phe Pro Thr Ala Tyr Leu Arg Asp Ala Gly Ile Lys Ala Asn Leu Phe  
 145 150 155 160  
 Ile Arg Leu Lys Asn His Ile Thr Gly Leu Gln Leu Arg Tyr Ser Gln  
 165 170 175  
 Arg Val Lys Lys Ala Val Lys Lys Ala Ser Val Val Thr Ser Ala Ser  
 180 185 190  
 Ser Glu Ser Gln Lys Ser Phe Lys Lys Tyr Phe His Ile Asp Ala Pro  
 195 200 205  
 Leu Leu Asn Glu Thr Gly Cys Tyr Pro Lys Thr Thr Ile Ile Asn Ser  
 210 215 220  
 Thr Lys Glu Lys Gly Asp Leu Asn Leu Leu Trp Val Gly Lys Leu Asp  
 225 230 235 240  
 Phe Arg Lys Gln Leu Pro Leu Ala Ile Lys Ala Ile Ala Arg Leu Ala  
 245 250 255  
 Asn Pro His Ile Lys Leu His Ile Val Gly Gly Asn Asn Asn Ser Tyr  
 260 265 270  
 Gln Lys Leu Ala Met Glu Leu Asn Ile Ser His Gln Cys Ile Trp His  
 275 280 285  
 Gly Val Ile Ser His Asn Glu Val Gln Glu Leu Met Gln Lys Val Asp  
 290 295 300  
 Ile Phe Phe Phe Thr Ser Ile Ala Glu Gly Thr Pro His Val Val Leu  
 305 310 315 320  
 Glu Ala Ile Asn Asn Asn Leu Pro Val Ile Cys Phe Asp Ile Cys Gly  
 325 330 335  
 His Gly Asp Ser Ile Asn Glu Gln Val Gly Ile Lys Ile Pro Leu Ser  
 340 345 350  
 Thr Pro Gln Gln Ser Ile Asn Asp Phe Ala Glu Lys Ile Thr Tyr Leu  
 355 360 365  
 Phe Asn His Arg Asp Val Leu Lys Gln Met Ser Glu Asn Cys Arg Val  
 370 375 380  
 Arg Gln Glu Glu Leu Ser Trp Asp Asn Lys Ala Lys Gln Met Val Ser  
 385 390 395 400  
 Leu Tyr Lys Lys Val Leu Ser Gln Glu  
 405

&lt;210&gt; 6871

&lt;211&gt; 255

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6871

Leu Lys Glu Met Lys Ile Arg Ile Leu Gly Ser Gly Thr Ser Thr Gly  
 1 5 10 15  
 Val Pro Glu Ile Gly Cys Thr Cys Ala Val Cys Thr Ser Lys Asp Pro  
 20 25 30  
 Arg Asp Cys Arg Leu Arg Thr Ser Ala Leu Val Tyr Thr Asp Asp Thr  
 35 40 45  
 Thr Ile Leu Leu Asp Cys Gly Pro Asp Phe Arg Glu Gln Met Leu Arg  
 50 55 60  
 Val Pro Phe Gly Lys Ile Asp Ala Val Leu Ile Ser His Glu His Tyr  
 65 70 75 80

[illegible]

<400> 6872

Ser 1	Tyr	Arg	Ile	Ile 5	Pro	Lys	Thr	Glu	Met 10	Lys	Arg	Glu	Val	Lys 15	Phe
Ser	Leu	Val	Phe	Arg	Asp	Met	Trp	Gln	Ser	Ala	Gly	Lys	Tyr	Val	Pro
			20					25					30		
Arg	Val	Asp	Gln	Leu	Val	Lys	Val	Ala	Pro	Ala	Ile	Val	Glu	Met	Gly
		35					40					45			
Cys	Phe	Ala	Arg	Val	Glu	Thr	Asn	Gly	Gly	Gly	Phe	Glu	Gln	Val	Asn
	50					55					60				
Leu 65	Leu	Phe	Gly	Glu	Asn	Pro	Asn	Lys	Ser	Val	Arg	Ala	Trp	Thr	Lys
					70					75					80
Pro	Phe	His	Glu	Ala	Gly	Ile	Gln	Thr	His	Met	Leu	Asp	Arg	Ala	Leu
				85						90				95	
Asn	Gly	Leu	Arg	Met	Ser	Pro	Val	Pro	Ala	Asp	Val	Arg	Lys	Leu	Phe
			100					105					110		
Tyr	Lys	Val	Lys	Lys	Ala	Gln	Gly	Thr	Asp	Ile	Thr	Arg	Thr	Phe	Cys
		115					120					125			
Gly	Leu	Asn	Asp	Val	Arg	Asn	Ile	Ala	Pro	Ser	Ile	Thr	Tyr	Ala	Lys
		130				135					140				
Asp 145	Ala	Gly	Met	Ile	Ser	Gln	Cys	Ser	Leu	Cys	Ile	Thr	His	Ser	Pro
					150					155					160
Ile	His	Thr	Val	Glu	Tyr	Tyr	Thr	Asn	Met	Ala	Leu	Glu	Leu	Ile	Lys
				165					170					175	
Leu	Gly	Ala	Asp	Glu	Ile	Cys	Ile	Lys	Asp	Met	Ala	Gly	Ile	Gly	Arg
			180					185					190		
Pro	Val	Ser	Leu	Gly	Lys	Ile	Val	Ala	Asn	Ile	Lys	Ala	Val	His	Pro
		195					200					205			
Asp	Ile	Pro	Ile	Gln	Tyr	His	Ser	His	Ala	Gly	Pro	Gly	Phe	Asn	Met
	210					215					220				
Ala 225	Ser	Ile	Leu	Glu	Val	Cys	Glu	Ala	Gly	Cys	Asp	Tyr	Val	Asp	Val
					230					235					240

Gly Met Glu Pro Leu Ser Trp Gly Thr Gly His Ala Asp Leu Leu Ser  
 245 250 255  
 Val Gln Ala Met Leu Lys Asp Ala Gly Phe Gln Val Pro Glu Ile Asn  
 260 265 270  
 Met Glu Ala Tyr Met Lys Val Arg Ala Leu Ile Gln Glu Phe Met Asp  
 275 280 285  
 Asp Phe Leu Gly Leu Tyr Ile Ser Pro Lys Asn Arg Leu Met Asn Ser  
 290 295 300  
 Leu Leu Ile Ala Pro Gly Leu Pro Gly Gly Met Met Gly Ser Leu Met  
 305 310 315 320  
 Ala Asp Leu Glu Thr Asn Leu Glu Ser Ile Asn Lys Tyr Lys Ala Lys  
 325 330 335  
 His Asn Leu Pro Phe Met Thr Gln Asp Gln Leu Leu Ile Lys Leu Phe  
 340 345 350  
 Asn Glu Val Ala Tyr Val Trp Pro Arg Val Gly Tyr Pro Pro Leu Val  
 355 360 365  
 Thr Pro Phe Ser Gln Tyr Val Lys Asn Leu Ser Met Met Asn Val Ile  
 370 375 380  
 Ala Met Glu Lys Gly Lys Glu Arg Trp Gly Met Ile Ala Asp Asp Ile  
 385 390 395 400  
 Trp Asp Met Ile Leu Gly Lys Ala Gly Arg Leu Pro Gly Lys Leu Ala  
 405 410 415  
 Pro Glu Ile Ile Glu Lys Ala Glu Arg Gly Arg Lys Phe Phe Glu  
 420 425 430  
 Gly Asn Pro Gln Asp Asn Tyr Pro Asp Asp Leu Glu Lys Tyr Arg Lys  
 435 440 445  
 Leu Met Lys Glu Lys Lys Trp Glu Thr Gly Glu Asp Asp Glu Glu Leu  
 450 455 460  
 Phe Glu Tyr Ala Met His Pro Ala Gln Tyr Glu Ala Tyr Lys Ser Gly  
 465 470 475 480  
 Lys Ala Lys Glu Asp Val Leu Ala Asp Val Ala Lys Arg Arg Ala Glu  
 485 490 495  
 Lys Glu Gln Val Pro Thr Glu Glu Ala Lys Pro Lys Thr Leu Thr Val  
 500 505 510  
 Gln Val Asp Gly Gln Ala Tyr Arg Val Thr Val Ala Tyr Gly Asp Thr  
 515 520 525  
 Glu Leu Pro Val Ala Pro Ala Ser Gln Pro Ser Ala Ala Gly Glu  
 530 535 540  
 Gly Lys Glu Val Leu Ser Pro Leu Glu Gly Lys Phe Phe Leu Val Lys  
 545 550 555 560  
 Asn Ala Gln Glu Thr Pro Leu Lys Val Gly Asp Ala Val Lys Glu Gly  
 565 570 575  
 Asp Val Leu Cys Tyr Val Glu Ala Met Lys Thr Tyr Asn Ala Ile Arg  
 580 585 590  
 Ala Glu Phe Gly Gly Thr Val Thr Ala Ile Ser Ala Asn Pro Gly Asp  
 595 600 605  
 Thr Val Ser Glu Asp Asp Val Leu Met Lys Ile Gly  
 610 615 620

&lt;210&gt; 6873

&lt;211&gt; 265

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6873

Trp Asp Arg Met Pro Ile Asn Ser Pro Gln Ser Ala Thr Leu Gly Asp  
 1 5 10 15  
 Asn Ala Val Arg Val Glu Met Glu Ala Gln Ile Leu Leu Gly Gly Ile  
 20 25 30



```
<210> 6874
<211> 282
<212> PRT
<213> B.fragilis
```

Asn	Arg	Leu	Ile	Met	Glu	Lys	Asn	Ile	Ser	Gln	Glu	Lys	Arg	Ile	Glu
1				5					10					15	
Glu	Leu	Glu	Ala	Arg	Leu	Lys	Glu	Gln	Glu	Lys	Leu	Gly	Ser	Leu	Gly
			20					25					30		
Leu	Leu	Ser	Ala	Gly	Ile	Ala	His	Glu	Ile	Gln	Asn	Pro	Leu	Asn	Phe
		35				40					45				
Val	Ile	Asn	Phe	Ser	Lys	Leu	Ser	Gly	Gln	Leu	Leu	Ala	Asp	Leu	Ala
	50				55					60					
Asp	Arg	Val	Asp	Glu	Ala	Lys	Ala	Arg	Ile	Pro	Glu	Ala	Glu	Leu	Glu
65				70						75					80
Asp	Ile	Lys	Asp	Ile	Leu	Ser	Gly	Leu	Arg	Glu	Asn	Val	Asp	Lys	Ile
			85					90						95	
Lys	Glu	His	Gly	Asp	Arg	Ala	Ile	Ser	Ile	Ile	Arg	Gly	Ile	Leu	Leu
			100					105					110		
Tyr	Ser	Arg	Gly	Lys	Glu	Asp	Glu	Phe	Met	Pro	Thr	Gln	Ile	Gln	Lys
		115					120					125			
Leu	Thr	Lys	Glu	Tyr	Val	Trp	Leu	Ala	Tyr	His	Ala	Met	Arg	Ala	Asn
	130				135					140					
Tyr	Lys	Asn	Phe	Asn	Ile	Ala	Ile	Arg	Glu	Asp	Tyr	Ala	Lys	Asp	Ile
145				150						155					160
Pro	Ser	Ile	Arg	Leu	Ile	Pro	Gln	Asp	Phe	Ser	Arg	Ala	Val	Leu	Asn
			165						170					175	

Val	Met	Asn	Asn	Ala	Cys	Tyr	Ala	Val	Trp	Lys	Lys	Trp	Gln	Asn	Ala
			180					185					190		
Pro	Glu	Gly	Tyr	Ser	Pro	Glu	Ile	Met	Val	Thr	Leu	Glu	Lys	Leu	Asp
		195					200					205			
Lys	Arg	Val	Val	Leu	Ser	Ile	Arg	Asp	Asn	Gly	Glu	Gly	Met	Ser	Pro
	210					215					220				
Glu	Val	Lys	Arg	Lys	Leu	Phe	Asp	Ser	Phe	Phe	Thr	Thr	Lys	Pro	Val
225					230					235					240
Gly	Gln	Gly	Thr	Gly	Leu	Gly	Met	Ala	Ile	Val	Arg	Asp	Ile	Ile	Glu
				245					250					255	
Asn	Lys	His	His	Gly	Lys	Val	Leu	Phe	Asp	Ser	Val	Leu	His	Glu	Tyr
			260					265					270		
Thr	Cys	Phe	Arg	Phe	Ile	Ile	Pro	Ile	Ala						
		275					280								

&lt;210&gt; 6875

&lt;211&gt; 440

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6875

Thr	Lys	Gln	Ile	Asn	Trp	Tyr	Val	Ala	Thr	Leu	Ile	Ser	Ser	Leu	Phe
1				5					10					15	
Ala	Ile	Lys	Leu	Lys	Lys	Tyr	Met	Arg	Thr	Cys	Ser	Pro	Arg	Leu	Ala
			20					25					30		
Lys	Glu	Lys	Tyr	Cys	Thr	Gly	Cys	Met	Ala	Cys	Ser	Asp	Ala	Cys	Thr
		35				40						45			
His	Asp	Ala	Ile	Lys	Ile	Val	Glu	Lys	Asn	Cys	Met	Pro	Phe	Val	Lys
	50				55					60					
Val	Asp	Thr	His	Lys	Cys	Met	Asn	Cys	His	Leu	Cys	Glu	Lys	Ala	Cys
65					70					75				80	
Pro	Ile	Ile	Thr	Pro	Val	Lys	Lys	Asn	Arg	Ala	Glu	Lys	Met	Asn	Val
			85					90						95	
Tyr	Gly	Gly	Trp	Ala	Asn	Asp	Glu	Gln	Thr	Arg	Ile	Asp	Ala	Ala	Ser
		100					105						110		
Gly	Gly	Gly	Phe	Ser	Gly	Leu	Ala	Gln	Ser	Phe	Phe	His	Leu	His	Lys
		115				120						125			
Glu	Asp	Lys	Val	Ala	Val	Ile	Gly	Ala	Thr	Leu	Ala	Asn	Asn	Arg	Val
	130					135				140					
Tyr	His	Gln	Leu	Ile	Glu	Gln	Glu	Lys	Asp	Ile	Val	Leu	Leu	Thr	Asn
145				150					155						160
Ser	Lys	Tyr	Ile	Gln	Ser	Asp	Thr	Gln	Gly	Ile	Tyr	Lys	Glu	Val	Ile
			165					170						175	
Glu	Arg	Leu	Lys	Thr	Gly	Tyr	Trp	Ile	Leu	Phe	Ser	Gly	Cys	Pro	Cys
		180						185					190		
Gln	Ile	Ala	Gly	Leu	Tyr	Gly	Phe	Leu	Gly	Lys	Lys	Arg	Asp	Ser	Glu
	195					200						205			
Arg	Leu	Ile	Thr	Ile	Glu	Val	Val	Cys	His	Gly	Ile	Ala	Ser	Tyr	Glu
	210				215						220				
Ala	Leu	Asp	Leu	His	Leu	Lys	Tyr	Tyr	Asn	Ser	Ser	Arg	Ile	Tyr	Arg
225					230					235					240
Phe	Arg	Asp	Lys	Arg	His	Gly	Thr	Gln	Asp	Trp	Lys	Gln	Ser	Gln	Cys
			245					250						255	
Thr	Thr	Ile	Glu	Gln	Asn	Gly	Glu	Glu	Ile	Lys	Leu	Lys	Arg	Lys	Asp
		260					265						270		
Asp	Met	Phe	Tyr	Ala	Ile	Tyr	Ala	Gly	Trp	Met	Leu	Asp	Arg	Lys	Ser
	275						280					285			
Cys	Ser	Asn	Cys	Gln	Phe	Ala	Glu	Ile	Asn	Arg	Val	Ala	Asp	Ile	Thr
	290					295					300				

Ile Ala Asp Phe Trp Gly Leu Gln Val Pro Asp Tyr Tyr Lys Gln Gly  
 305 310 315 320  
 Val Ser Leu Ile Ile Ala Asn Asn Asn Lys Ala Asp Thr Met Ile Lys  
 325 330 335  
 Ala Ala Asp Ala Ile Tyr Thr Phe Lys Glu Ser Leu Arg Thr Ala Ile  
 340 345 350  
 Asn Gly Asn Pro His Leu Phe Thr Gly Tyr Lys Leu Ile Gln Phe His  
 355 360 365  
 Pro Ile Val Met Trp Pro Asp Phe Phe Arg Lys Ile Leu Pro Lys Arg  
 370 375 380  
 Ile Arg Phe Lys Thr Leu Thr Asn Arg Met Pro Tyr Lys Leu Phe Trp  
 385 390 395 400  
 Ala Leu Tyr Lys Leu Gly Thr Ile Tyr Leu Val Lys Tyr Gln Lys Lys  
 405 410 415  
 Gln Leu Ile Ser Lys Phe Gln Lys Asp Asp Asn Leu Leu Lys Leu Leu  
 420 425 430  
 Asn Asn Ala Asn Arg Gly Gly Gly  
 435 440

<210> 6876

<211> 332

<212> PRT

<213> B.fragilis

<400> 6876

Pro Pro Lys Met Asn Asn Thr Asn Pro Leu Val Ser Ile Ile Val Pro  
 1 5 10 15  
 Val Tyr Lys Val Glu Arg Tyr Ile His Arg Ser Ile Asp Ser Leu Leu  
 20 25 30  
 Arg Gln Thr Tyr Asn Asn Leu Glu Ile Ile Leu Val Asp Asp Gly Ser  
 35 40 45  
 Pro Asp Asn Cys Pro Phe Ile Cys Asp Lys Tyr Ala Met Gln Asp Asn  
 50 55 60  
 Arg Ile Arg Val Ile His Lys Ser Asn Gly Gly Leu Ser Asp Ala Arg  
 65 70 75 80  
 Asn Ala Ala Leu Asn Val Met Thr Gly Gln Tyr Val Thr Phe Val Asp  
 85 90 95  
 Ser Asp Asp Tyr Ile Ala Asp Asn Met Ile Glu Lys Phe Ile Glu Thr  
 100 105 110  
 Val Lys Leu Tyr Gln Cys Asn Met Val Val Ala Gly Met Asn Ile Ile  
 115 120 125  
 Asp Lys Asn Asn Gln Ile Tyr Asp Tyr Arg Arg Thr Leu Thr Ser Thr  
 130 135 140  
 Leu Ser Thr Gly Ile Asp Ile Thr Arg Lys Leu Leu Lys Asp Val Phe  
 145 150 155 160  
 Pro Phe Asn Phe Val Cys Ala Lys Ile Phe Glu Ser Ser Leu Phe Glu  
 165 170 175  
 Glu Ile Arg Phe Pro Val Gly Arg His Tyr Glu Asp Thr Ala Thr Thr  
 180 185 190  
 Tyr Lys Leu Thr His Lys Cys Glu Arg Ile Tyr Cys Ile Ala Asp Cys  
 195 200 205  
 Leu Tyr Phe Tyr Glu Leu Glu Arg Glu Gly Asn Ile Thr Ser Glu Leu  
 210 215 220  
 Asn Thr Ser Lys Ala Ile Lys Ser Tyr Ile Asp Gly Cys Leu Asn Ser  
 225 230 235 240  
 Gln Glu Gln Ile Phe Phe Cys Gln Lys His Lys Asp Phe Ser Asp Leu  
 245 250 255  
 Leu Pro Val Leu Thr Lys Arg Leu Gln Leu Trp Ala Leu Leu Ala Ile  
 260 265 270

Gln Ser Ala Ile Ser Leu Gly Tyr Lys Glu Tyr Met Phe Tyr Tyr His  
 275 280 285  
 Gln Ile Arg Ile Tyr Ile Arg Ser Leu Ser Tyr Thr Gln Arg Met Thr  
 290 295 300  
 His Leu Gln Ile Ala Leu Thr Phe Pro Ile Ile Tyr Tyr Ser Leu Tyr  
 305 310 315 320  
 Pro Leu Leu Ser Arg Leu Lys Lys Met Tyr Lys Asn  
 325 330

<210> 6877  
 <211> 78  
 <212> PRT  
 <213> B.fragilis

<400> 6877  
 Met Asn Asn Val Ala Glu His Ala Arg Glu Gln Lys Ala Gly Met Lys  
 1 5 10 15  
 Cys Pro Gln Cys Gly Ala Phe Ile Glu Thr Ser Ile Phe Glu Leu Leu  
 20 25 30  
 Thr Ser Asn Ala Leu Gln Cys Pro Ser Cys His Leu Arg Leu Asn Ile  
 35 40 45  
 Asp Arg Met Lys Ser Lys Ala Ala Phe Asp Ala Leu Arg Lys Val Gln  
 50 55 60  
 Asn Ala Gln Glu Asn Leu Glu Arg Lys Ser Lys Phe Asn Gly  
 65 70 75

<210> 6878  
 <211> 405  
 <212> PRT  
 <213> B.fragilis

<400> 6878  
 Ile Arg Tyr Val Ser Ile Tyr Gly Thr Ile Leu Tyr Leu Asn Ile Ser  
 1 5 10 15  
 Val Asn Val Ile Thr Leu Thr Ser Lys Tyr Asp Cys Cys Gly Cys Thr  
 20 25 30  
 Ala Cys Thr Ser Ala Cys Asn Arg Gly Ala Ile Ile Met Gln Glu Asp  
 35 40 45  
 Glu Gln Gly Phe Leu Tyr Pro His Ile Asn Thr Thr Gln Cys Ile Asp  
 50 55 60  
 Cys Gly Leu Cys Asn Lys Val Cys Pro Val Phe Arg Tyr Asp Val Ile  
 65 70 75 80  
 Ser Asn Lys Lys Asn Val Asn Pro His Ile Leu Ala Leu His His His  
 85 90 95  
 Asn Glu Lys Thr Trp Ile Ser Ser Ser Ser Gly Gly Val Phe Ala Ser  
 100 105 110  
 Leu Thr Asp Tyr Ala Leu Arg Gln Ala Gly Val Ile Phe Gly Ala Ile  
 115 120 125  
 Tyr Asp Asp Asn Phe Val Val Val His Arg Arg Ala Glu Thr Gln Glu  
 130 135 140  
 Asp Thr Leu Lys Phe Arg Gly Ser Lys Tyr Val Gln Ser Asn Leu Thr  
 145 150 155 160  
 Gly Ile Tyr Gln Gln Val Lys Phe Tyr Leu Gln Glu Gln Arg Phe Val  
 165 170 175  
 Leu Phe Ser Gly Thr Pro Cys Gln Val Glu Gly Leu Lys Gly Tyr Leu  
 180 185 190  
 Gln Arg Ser Tyr Asp Asn Leu Leu Thr Val Asp Ile Leu Cys His Gly  
 195 200 205  
 Val Pro Ser Pro Arg Val Phe His Asp Tyr Leu Asn Phe Ile Arg Gln

210	215	220
Asn Ser Asp Phe His Phe Thr Gly Ile Phe Met Lys Asp Lys Thr Phe		
225	230	235
Gly Trp Gly Tyr Gln Asn Ser Arg Leu Phe Phe Gly Lys Asn Ala Ser		240
	245	250
Gln Phe Asn Thr Val Leu Ser Arg Leu Trp Asn Asp Ile Phe Tyr Ser		255
	260	265
His Leu Thr Thr Arg Pro Ser Cys His Ala Cys Arg Phe Thr Asn Tyr		270
	275	280
Leu Arg Pro Gly Asp Ile Thr Ile Gly Asp Phe Trp Gly Ile Glu Lys		285
	290	295
His His Pro Gln Phe Thr Asp Ser Arg Gly Ile Ser Leu Ile Met Leu		300
305	310	315
Asn Asn Thr Lys Ala Glu Ile Val Trp Asn His Ile Lys Asp Asp Phe		320
	325	330
Asn Tyr Leu Glu Ser Asn Ile Lys Glu Cys Ile Gln Pro Asn Leu Lys		335
	340	345
Tyr Pro Val Pro Glu Pro Val Asn Lys Ala Thr Phe Trp Gln Asp Tyr		350
	355	360
Ala Ser Met Pro Phe Phe Gln Ile Met Asn Lys Tyr Tyr Arg Ile Thr		365
370	375	380
His Gln Asp Leu Leu Lys Asn Arg Phe Tyr Met Ile Leu Leu Thr Leu		385
385	390	395
Lys Lys Arg Phe Thr		400
	405	

&lt;210&gt; 6879

&lt;211&gt; 307

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6879

Leu Ser Val Val Arg Asp Leu Leu Thr Val Pro Leu Lys Asn Ala Lys	
1	5
Leu Glu Ala Ala Gly Ala Gly Ala Ile Val Leu Lys Ser Leu Phe Glu	
	20
Glu Gln Ile Met Met Glu Ala Asp Arg Leu Arg Asn Pro Ser Tyr Tyr	
	35
Pro Glu Gly Ser Asp Tyr Leu Ala Glu Tyr Ile Arg Asn His Lys Leu	
50	55
Thr Glu Tyr Leu Glu Leu Ile Lys Glu Ser Lys Lys Ile Cys Thr Ile	
65	70
Pro Val Ile Ala Ser Ile Asn Cys Tyr Thr Asp Ala Glu Trp Val Asp	
	85
Phe Ala Lys Gln Ile Glu Glu Ala Gly Ala Asp Ala Leu Glu Ile Asn	
	100
Ile Leu Ala Leu Gln Ser Asp Ile Gln Tyr Lys Tyr Gly Ser Phe Glu	
	115
Gln Arg His Ile Asp Ile Leu Ser His Ile Lys Lys Thr Ile Arg Ile	
130	135
Pro Val Ile Met Lys Leu Gly Ser Asn Phe Thr Asn Pro Val Ala Leu	
145	150
Ile Asp Gln Leu Tyr Ala Asn Gly Ala Ala Val Val Leu Phe Asn	
	165
Arg Phe Tyr Gln Pro Asp Ile Asp Val Glu Lys Met Glu His Thr Ser	
	180
Gly Asp Val Phe Ser Asn Ala Ser Asp Leu Ser Thr Thr Leu Arg Trp	
	195
Ile Gly Ile Ser Ser Ser Leu Val Ser Lys Ile Asp Tyr Ala Ala Ser	
	200
	205

210                      215                      220  
 Gly Gly Ile His Lys Pro Asp Gly Ile Val Lys Ala Ile Leu Ala Gly  
 225                      230                      235                      240  
 Ala Ser Ala Ile Glu Ile Cys Ser Ala Ile Tyr Gln Asn Thr Asn Leu  
                          245                      250                      255  
 Phe Val Gly Glu Met Asn Arg Phe Leu Ser Ala Trp Met Glu Arg Lys  
                          260                      265                      270  
 Gly Phe Lys His Ile Ser Gln Phe Lys Gly Lys Leu Asn Ala Lys Asp  
                          275                      280                      285  
 Val Glu Gly Ile Asn Met Phe Glu Arg Thr Gln Phe Leu Lys Tyr Phe  
                          290                      295                      300  
 Ser Glu Lys  
 305

<210> 6880

<211> 61

<212> PRT

<213> B.fragilis

<400> 6880

Asn Arg Pro Val Tyr Gln Cys Phe Tyr Glu Ile Thr Tyr Thr Cys Lys  
 1                      5                      10                      15  
 Val Ile Leu Asn Asp Val Lys Tyr Tyr Gly Val Arg Arg Asp Lys Ser  
                          20                      25                      30  
 Lys Phe His Val Leu Asn Tyr Asn Ile Trp Leu Leu Val Tyr Leu Leu  
                          35                      40                      45  
 Tyr Glu Ser Lys Glu Met Gln Tyr Met Ile Asp Tyr Ser  
                          50                      55                      60

<210> 6881

<211> 120

<212> PRT

<213> B.fragilis

<400> 6881

Asn Leu Lys Val Leu Tyr Met Gly Lys Asn Arg Asn His Tyr Ser Phe  
 1                      5                      10                      15  
 Phe Leu Tyr Phe Val Phe Ile Ile Phe Val Leu Leu Gly Cys Arg Pro  
                          20                      25                      30  
 Val Arg Val Gln Met Pro Asp Gly Met Tyr Gly Arg Trp Lys Ser Ser  
                          35                      40                      45  
 Ala Gly Arg Pro Asp Ile Thr Leu Gly Thr Asp Ser Ile Gly Ser Phe  
                          50                      55                      60  
 Ala Ile Val His His Arg Ile Tyr Asp Gly Lys Ile Cys Pro Val Arg  
 65                      70                      75                      80  
 Tyr Pro Leu His Leu Asn Ser Pro Thr Lys Gly Tyr Ile Arg Ala Glu  
                          85                      90                      95  
 Gly Cys Ile Leu Phe Tyr Tyr Asp Ser Leu Lys Cys Val Leu Tyr Phe  
                          100                      105                      110  
 Ser Pro Gly Gly Asp Tyr Thr Gln  
                          115                      120

<210> 6882

<211> 64

<212> PRT

<213> B.fragilis

<400> 6882

Ile Asn Glu Val Thr Asp Ser Leu Lys Lys Pro Leu Thr Ile Ile Thr

1	5	10	15
Met Ala Asp Leu Lys Thr Thr Phe Ala Gly Leu Thr Leu Lys Asn Pro			
	20	25	30
Val Ile Ile Ser Ser Ser Gly Leu Thr Asn Ser Ala Ala Lys Lys Arg			
	35	40	45
Lys Ala Gly Ser Cys Arg Cys Arg Ser His Cys Pro Glu Ile Thr Ile			
50	55	60	

&lt;210&gt; 6883

&lt;211&gt; 371

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6883

Ala Ser Ile Phe Pro Lys Asp Ile Phe Leu Val Met Lys Val Ser Ile			
1	5	10	15
Ile Val Pro Cys Tyr Ser Val Ala Ser Lys Leu Pro Arg Cys Val His			
	20	25	30
Asn Leu Leu Ala Gln Thr Phe Thr Asp Trp Glu Leu Ile Leu Ile Asp			
	35	40	45
Asp Gly Ser Thr Asp Asn Thr Trp Asp Ile Cys Asn Ser Phe Thr Lys			
50	55	60	
Asn Asn Ala His Ile His Ala Val His Lys Glu Asn Gly Gly Val Ser			
65	70	75	80
Ser Ala Arg Asn Thr Gly Ile Glu Ile Ala Lys Gly Glu Phe Ile Thr			
	85	90	95
Phe Ile Asp Ser Asp Asp Tyr Val Lys Pro Asp Tyr Leu Gln Lys Leu			
	100	105	110
Val Glu Gly Gln Glu Ala Asp Leu Val Leu Cys Gly Phe Arg Ser Ser			
	115	120	125
Thr Gly Ile Asp Phe Thr Pro Glu Pro Gln Tyr Leu Ile Gly Asp Asp			
	130	135	140
Leu Ser Lys Asn Ile Gln Ala Ile Val Glu Asn Asp Tyr Leu Leu Tyr			
145	150	155	160
Ser Pro Trp Cys Lys Leu Phe Arg Arg Asp Ile Ile Gln Lys His Gln			
	165	170	175
His Arg Phe Asp Pro Glu Ile Arg Leu Gly Glu Asp Thr Ile Phe Cys			
	180	185	190
Tyr Lys Tyr Leu Leu Tyr Cys Ser Ser Ile Lys Val Val Ala Ser Asn			
	195	200	205
Ser Tyr Phe Tyr Asp Gly Val Trp Gly Gly Tyr Lys Lys Tyr Val Leu			
	210	215	220
Thr Arg Gln Glu Val Glu Tyr Leu Asp Lys Ala Glu Ile Thr Thr Leu			
225	230	235	240
His Asp Ile Asn Gln His Phe Asn Cys Arg Ile Asp Leu Thr Tyr Arg			
	245	250	255
Gly Tyr His Val Ala Met Leu Lys Gly Leu Tyr Glu Lys Phe Arg Asp			
	260	265	270
Tyr Asp Thr Phe Glu Met Tyr Thr Arg Thr His Asp Val Leu Pro Pro			
	275	280	285
Glu His Phe Phe Ala Asn His Lys Leu Ser Tyr Ile Phe Trp Gly Ile			
	290	295	300
Val Glu Leu Glu Thr Leu Tyr Val Asp Lys Glu Tyr Cys Ala Gly Lys			
305	310	315	320
Leu Phe Met Gln Arg Leu His His Phe Phe Thr Ile Pro Thr Asn Gln			
	325	330	335
Leu Leu Ser Tyr Ser Tyr Lys Met Arg Leu Ile His Tyr Leu Val Lys			
	340	345	350
Ser Lys His Tyr Thr Met Ala His Val Leu Leu Ile Phe Leu Ser Ile			

355  
Leu Lys His  
370

360

365

<210> 6884  
<211> 465  
<212> PRT  
<213> B.fragilis

&lt;400&gt; 6884

Leu	Gln	Gln	Phe	Ile	Thr	Val	Val	Val	Asn	Trp	Leu	Phe	Asp	Cys	Lys
1				5					10					15	
Tyr	Gln	His	Leu	Asn	Leu	Arg	Ile	Met	Gly	Thr	Lys	Lys	Asn	Phe	Val
			20					25					30		
Leu	Asp	Thr	Asn	Val	Ile	Leu	His	Asp	Tyr	Asn	Cys	Leu	Lys	Asn	Phe
		35					40					45			
Gln	Glu	Asn	Asp	Ile	Tyr	Leu	Pro	Ile	Val	Val	Leu	Glu	Glu	Leu	Asp
		50				55					60				
Lys	Phe	Lys	Lys	Gly	Asn	Glu	Gln	Ile	Asn	Tyr	Asn	Ala	Arg	Glu	Phe
65					70				75					80	
Val	Arg	Glu	Leu	Asp	Leu	Ile	Thr	Asp	Asp	Ser	Leu	Phe	Thr	His	Gly
				85				90						95	
Ala	Pro	Leu	Gly	Glu	Gly	Leu	Gly	Lys	Leu	Phe	Ile	Val	Thr	Gly	Asp
			100					105					110		
Ser	Glu	Ala	Pro	Lys	Val	His	Glu	Ser	Phe	Pro	Ala	Arg	Lys	Pro	Asp
		115					120					125			
His	Gln	Ile	Leu	Ala	Val	Ala	Glu	Tyr	Leu	Ala	Arg	Lys	Tyr	Pro	Lys
	130					135					140				
Met	Lys	Asn	Ile	Leu	Val	Thr	Lys	Asp	Val	Asn	Leu	Arg	Met	Lys	Ala
145				150					155					160	
Arg	Ser	Ile	Gly	Ile	Leu	Cys	Glu	Asp	Tyr	Ile	Thr	Asp	Lys	Val	Val
			165					170						175	
Asn	Val	Asp	Ile	Phe	Glu	Lys	Ser	Asn	Glu	Val	Phe	Glu	Asn	Ile	Glu
		180						185					190		
Pro	Asp	Leu	Ile	Asp	Arg	Ile	Tyr	Ser	Ser	Arg	Glu	Gly	Leu	Asp	Ile
	195					200						205			
Ser	Glu	Phe	Asp	Phe	Lys	Asp	Ile	Ile	Arg	Pro	Asn	Glu	Cys	Phe	Ile
	210				215						220				
Leu	Lys	Ser	Asp	Arg	Ser	Ser	Val	Leu	Ala	Arg	Tyr	Asn	Pro	Phe	Thr
225				230						235				240	
His	Thr	Val	Cys	Arg	Val	Asn	Lys	Thr	Lys	Asn	Tyr	Gly	Ile	Glu	Pro
			245						250					255	
Arg	Asn	Ala	Glu	Gln	Ser	Phe	Ala	Phe	Glu	Ile	Leu	Asn	Asp	Pro	Asp
		260						265					270		
Ile	Lys	Leu	Val	Ala	Leu	Thr	Gly	Lys	Ala	Gly	Thr	Gly	Lys	Thr	Leu
	275						280					285			
Leu	Ala	Leu	Ala	Ala	Ala	Leu	Gly	Lys	Leu	Thr	Glu	Tyr	Lys	Gln	Ile
	290					295					300				
Leu	Leu	Ala	Arg	Pro	Ile	Val	Ala	Leu	Ser	Asn	Lys	Asp	Leu	Gly	Phe
305				310						315				320	
Leu	Pro	Gly	Asp	Ala	Thr	Glu	Lys	Val	Ala	Pro	Tyr	Met	Gln	Pro	Leu
			325					330					335		
Phe	Asp	Asn	Leu	Asn	Val	Ile	Lys	Arg	Gln	Phe	Ala	Ser	Asn	Ser	Thr
		340						345					350		
Glu	Val	Lys	Arg	Leu	Glu	Asp	Met	Gln	Lys	Ser	Glu	Gln	Leu	Val	Ile
	355					360					365				
Glu	Ala	Leu	Ala	Phe	Ile	Arg	Gly	Arg	Ser	Leu	Ser	Glu	Thr	Tyr	Cys
	370					375					380				
Ile	Ile	Asp	Glu	Ala	Gln	Asn	Leu	Thr	Pro	His	Glu	Ile	Lys	Thr	Ile



385 390 395 400  
 Ile Thr Arg Ala Gly Glu Gly Thr Lys Met Val Phe Thr Gly Asp Ile  
 405 410 415  
 Gln Gln Ile Asp Gln Pro Tyr Leu Asp Ser Gln Ser Asn Gly Leu Val  
 420 425 430  
 Tyr Met Ile Asp Arg Met Lys Asp Gln Asn Leu Phe Ala His Val Asn  
 435 440 445  
 Leu Val Lys Gly Glu Arg Ser Glu Leu Ser Glu Leu Ala Ser Asn Leu  
 450 455 460  
 Met  
 465

<210> 6885  
 <211> 70  
 <212> PRT  
 <213> B.fragilis

<400> 6885  
 Pro Gln Phe Ser Asp Pro Ala Lys Pro Gln Phe Tyr Lys Pro Pro Leu  
 1 5 10 15  
 Ile His Gln Pro Arg Val Lys Gly Gln Pro Tyr Phe Leu Arg Ser Ser  
 20 25 30  
 Arg Gln Thr Leu Thr Thr Cys Tyr Leu Gly Pro Ile Asn Asn Asn Leu  
 35 40 45  
 Ser Ser Asp Asn Arg Cys Trp His Leu Ser His Asn Trp Lys Thr Thr  
 50 55 60  
 Phe Pro Lys Pro Leu Gly  
 65 70

<210> 6886  
 <211> 168  
 <212> PRT  
 <213> B.fragilis

<400> 6886  
 Ser Trp Leu Ser Ser Pro Gln Ser Pro Tyr Ser Val Ser Ser Phe Gly  
 1 5 10 15  
 Tyr Ser Pro Phe Asn Leu Thr Asp Ser Asp Met Lys Thr Thr Asp His  
 20 25 30  
 Phe Lys Arg Thr Ile Gln Met Tyr Leu Glu Gln Arg Ala Ala Glu Asp  
 35 40 45  
 Ala Leu Phe Ala Lys Asn Tyr Arg Asn Pro Ala Lys Asn Ile Asp Asp  
 50 55 60  
 Cys Val Thr Tyr Ile Leu Asn Tyr Val Gln Lys Ser Gly Cys Asn Gly  
 65 70 75 80  
 Phe Thr Asp Gly Glu Ile Tyr Gly Gln Ala Val His Tyr Tyr Asp Glu  
 85 90 95  
 Asn Glu Ile Glu Val Gly Lys Pro Ile Gln Cys Gln Ile Ala Val Asn  
 100 105 110  
 His Val Val Glu Leu Thr Ala Glu Glu Lys Ala Glu Ala Arg Gln Asn  
 115 120 125  
 Ala Ile Arg Gln Tyr Gln Asp Gly Leu Met Arg Glu Met Gln Asn Arg  
 130 135 140  
 Asn Lys Pro Arg Thr Ala Thr Lys Ala Thr Val Gln Glu Val Gln Gln  
 145 150 155 160  
 Pro Ser Leu Phe Asp Leu Gly Leu  
 165

<210> 6887

<211> 214  
 <212> PRT  
 <213> B.fragilis

<400> 6887

Val	Glu	Thr	Ser	Asn	Met	Gly	Lys	Gln	Lys	Phe	Tyr	Val	Val	Trp	Asp
1				5					10					15	
Gly	Val	Thr	Pro	Gly	Ile	Tyr	Thr	Ser	Trp	Thr	Glu	Cys	Gln	Leu	Gln
			20					25					30		
Val	Lys	Gly	Tyr	Asp	Ser	Ala	Lys	Tyr	Lys	Ser	Phe	Asp	Asn	Arg	Glu
		35					40					45			
Glu	Ala	Glu	Arg	Ala	Phe	Ala	Ala	Ser	Pro	Tyr	Ala	Tyr	Ile	Gly	Lys
	50					55					60				
Asn	Ala	Lys	Lys	Lys	Ile	Thr	Gly	Pro	Ser	Thr	Glu	Met	Leu	Pro	Ala
65					70					75				80	
Ala	Val	Ile	Glu	Asn	Ser	Leu	Ala	Val	Asp	Ala	Ala	Cys	Ser	Gly	Asn
				85					90					95	
Pro	Gly	Pro	Met	Glu	Tyr	Arg	Gly	Val	His	Val	Ala	Ser	Arg	Gln	Glu
			100					105					110		
Ile	Phe	His	Phe	Gly	Pro	Met	Lys	Gly	Thr	Asn	Asn	Ile	Gly	Glu	Phe
	115						120					125			
Leu	Ala	Leu	Val	His	Gly	Leu	Ala	Leu	Leu	Lys	Gln	Lys	Gly	Phe	Asp
	130					135					140				
Met	Pro	Ile	Tyr	Ser	Asp	Ser	Ala	Asn	Ala	Ile	Ser	Trp	Val	Lys	Gln
145					150					155				160	
Lys	Lys	Cys	Lys	Thr	Lys	Leu	Ser	Arg	Thr	Ala	Glu	Thr	Glu	Ala	Leu
				165					170					175	
Phe	Val	Leu	Ile	Glu	Arg	Ala	Glu	Lys	Trp	Leu	Lys	Glu	Asn	Lys	Tyr
			180					185					190		
Thr	Thr	Pro	Ile	Leu	Lys	Trp	Glu	Thr	Arg	Glu	Trp	Gly	Glu	Ile	Pro
		195					200					205			
Ala	Asp	Phe	Gly	Arg	Lys										
	210														

<210> 6888  
 <211> 211  
 <212> PRT  
 <213> B.fragilis

<400> 6888

Lys	Asn	Gln	Ser	Asn	Lys	Glu	Arg	Ser	Ile	Phe	Met	Lys	Lys	Ser	Phe
1				5					10					15	
Glu	Glu	Ala	Leu	Lys	His	Arg	Arg	Thr	Tyr	Tyr	Ser	Ile	Thr	Asn	Gln
			20					25					30		
Ser	Pro	Val	Ser	Asp	Glu	Glu	Ile	Glu	Arg	Ile	Val	Asn	Leu	Ala	Val
		35					40					45			
Thr	His	Val	Pro	Ser	Ala	Phe	Asn	Ser	Gln	Ser	Thr	Arg	Val	Val	Leu
	50					55					60				
Leu	Leu	Gly	Glu	Asn	His	Lys	Lys	Leu	Trp	His	Ile	Val	Lys	Glu	Thr
65				70					75					80	
Leu	Arg	Lys	Ile	Val	Pro	Pro	Glu	Val	Phe	Lys	Thr	Thr	Glu	Ala	Lys
				85					90					95	
Ile	Asp	Asn	Ser	Phe	Ala	Ser	Gly	Tyr	Gly	Thr	Val	Leu	Phe	Phe	Glu
		100						105					110		
Asp	Gln	Ser	Val	Val	Lys	Gly	Leu	Gln	Glu	Ala	Phe	Ser	Ser	Tyr	Lys
		115					120					125			
Asp	Asn	Phe	Pro	Gly	Trp	Ser	Leu	Gln	Thr	Ser	Ala	Met	His	Gln	Leu
	130						135					140			
Ala	Val	Trp	Thr	Met	Leu	Glu	Asp	Val	Gly	Phe	Gly	Ala	Ser	Leu	Gln

[illegible]

<400> 6889

Asp 1	Cys	Val	Ser	Met 5	Asn	Val	Ser	Gly	Ala 10	Thr	Ala	Leu	Trp	Thr 15	Arg
Leu	Ser	Val	Lys 20	Thr	Glu	Phe	Gly	Thr 25	Lys	Asp	Tyr	Val	Val 30	Asp	Val
Lys	Lys	Asp 35	Leu	Lys	Asn	Ile	Ser 40	Ser	Asp	Phe	Asn	Glu 45	Arg	Ser	Leu
His 50	Ser	Val	Val	Cys	Met 55	Glu	Lys	Gln	Leu	Ser	Ala 60	Asp	Thr	Leu	Asn
Arg 65	Ile	Trp	Ala	Asp 70	Ser	Leu	Arg	Met	Arg	His 75	Ile	Val	Ala	Lys	Thr 80
Ser	Val	Gln	Val	Val 85	Ser	Ala	Asp	Ser	Ser 90	Lys	Cys	Ile	Arg	Ser	Glu
Gly	Ser	Cys 100	Asp	Asn	Asn	Cys	Phe 105	Val	Ser	Pro	Ile	Trp 110	Ile	Ala	Tyr
Val	Gly	Asn 115	Glu	Cys	Glu	Val	Glu 120	Val	Ala	Gly	Phe	Leu 125	Ser	Ser	Thr
Cys	Trp 130	Ser	Val	Ile	Arg 135	Tyr	Ser	Ser	Ser	Ser	Phe 140	Val	Leu	Ile	Val
Gly 145	Val	Thr	Phe	Ile 150	Leu	Phe	Ala	Phe	Phe	Tyr 155	Tyr	Val	Tyr	Lys	Val 160
Lys	Lys	His	Leu	Ser 165	Asp	Ser	Glu	Val	Glu 170	Glu	Glu	Leu	Leu	Lys 175	Glu
Arg	Leu	Glu 180	Lys	Glu	Arg	Glu	Arg 185	Tyr	Gln	Asp	Leu	Glu 190	Glu	Lys	Arg
Arg	Gln 195	Tyr	Glu	Gln	Gln	Leu	Asn 200	Leu	Leu	Gln	Gln 205	Glu	Lys	Met	
Arg 210	Ile	Arg	Glu	Leu	Ser 215	Asp	Leu	Arg	Glu	Lys 220	His	Lys	Gln	Lys	Glu
Ala 225	Gln	Ile	Glu	Val 230	Leu	Ser	Val	Glu	Lys 235	Lys	Arg	Ser	Lys	Glu	Gln 240
Gln	Ser	Ile	Leu	Glu 245	Lys	Glu	Cys	Gln	Glu 250	Gly	Met	Leu	Gln	Ile	Thr 255
Met	Leu	Ser 260	Asp	Lys	Leu	Glu	Lys 265	Glu	Lys	Ile	Asp	Arg 270	Gly	Glu	Leu
Gln	Gln 275	Lys	Leu	Ala	Ala	Cys 280	Glu	Leu	Gln	Ile	Ala 285	Glu	Leu	Arg	Lys
Ile 290	Lys	Glu	Met	Leu	Gly 295	Glu	Glu	Leu	Val	Ile	Tyr 300	Lys	Leu	Cys	Ser
Gly 305	Leu	Thr	Phe	Asp 310	Pro	Arg	Asn	His	Ile 315	Leu	Asp	Cys	Ala	Gly	Asn 320
Arg	Ile	Lys	Leu	Asp 325	Ala	Gln	Gly	Ser	Arg 330	Leu	Leu	Leu 335	Phe	Leu	
Glu	Ala	Ser	Glu	Asn	Lys	Leu	Ser	Tyr	Glu	Glu	Leu	Leu	Glu	Met	Met

	340		345		350
Trp	Ala	Asp	Arg	Arg	Lys
	355				360
Arg	Leu	Arg	Lys	Ala	Leu
	370				375
Asn	Glu	Gly	Gly	Tyr	Gln
	385				390
Ser	Gln	Arg	Glu	Leu	Phe
					405

<210> 6890  
 <211> 714  
 <212> PRT  
 <213> B.fragilis

<400> 6890

His	Pro	Val	Ser	Thr	Thr	Lys	Ser	Lys	Val	Thr	Ile	His	Lys	Lys	Val
1				5					10					15	
Ile	Ser	Met	Lys	Thr	Ile	Ile	Ala	Glu	Lys	Pro	Ser	Val	Ala	Arg	Glu
			20					25					30		
Ile	Ala	Arg	Ile	Val	Gly	Ala	Thr	Lys	Arg	Glu	Glu	Gly	Tyr	Phe	Glu
			35				40					45			
Gly	Gly	Asp	Cys	Ala	Val	Thr	Trp	Ala	Phe	Gly	His	Leu	Val	Gln	Leu
	50					55					60				
Ala	Met	Pro	Asp	Gly	Tyr	Gly	Ile	Arg	Gly	Phe	Val	Arg	Asp	Asn	Leu
	65				70					75					80
Pro	Val	Ile	Pro	Glu	Thr	Phe	Thr	Leu	Ile	Pro	Arg	Gln	Glu	Lys	Thr
				85					90					95	
Glu	Lys	Gly	Tyr	Lys	Pro	Asp	Ser	Gly	Val	Val	Ser	Gln	Ile	Lys	Ile
			100					105					110		
Ile	Ala	Arg	Leu	Phe	Lys	Glu	Ser	Glu	Gln	Ile	Ile	Val	Ala	Thr	Asp
			115					120					125		
Ala	Gly	Arg	Glu	Gly	Glu	Leu	Ile	Phe	Arg	Tyr	Leu	Tyr	His	Tyr	Ile
	130					135					140				
Gly	Cys	Thr	Thr	Pro	Phe	Val	Arg	Leu	Trp	Ile	Ser	Ser	Leu	Thr	Asp
	145				150					155					160
Lys	Ala	Ile	Arg	Glu	Gly	Leu	Arg	Asn	Leu	Glu	Ala	Gly	Ser	Lys	Tyr
				165					170					175	
Asp	Asn	Leu	Tyr	Leu	Thr	Ala	Lys	Ala	Arg	Ser	Glu	Ser	Asp	Trp	Leu
			180					185					190		
Val	Gly	Ile	Asn	Gly	Thr	Gln	Ala	Leu	Ser	Ile	Ala	Ala	Gly	His	Gly
			195				200					205			
Thr	Tyr	Ser	Val	Gly	Arg	Val	Gln	Thr	Pro	Thr	Leu	Ala	Met	Val	Cys
	210					215					220				
Val	Arg	Tyr	Trp	Glu	Asn	Arg	Arg	Phe	Thr	Val	Glu	Pro	Phe	Trp	Gln
	225				230					235					240
Leu	His	Ile	Ala	Thr	Asp	Gly	Gly	Asn	Gly	Glu	Val	Val	Lys	Phe	Ser
				245					250					255	
Ser	Ser	Glu	Lys	Trp	Lys	Glu	Lys	Glu	Pro	Ala	Thr	Glu	Leu	Tyr	Asn
			260					265					270		
Lys	Val	Lys	Glu	Ala	Gly	Thr	Ala	Thr	Val	Thr	Lys	Ala	Glu	Arg	Lys
		275					280					285			
Glu	Lys	Thr	Glu	Asp	Thr	Pro	Leu	Leu	Tyr	Asp	Leu	Thr	Thr	Leu	Gln
	290					295					300				
Lys	Glu	Ala	Asn	Ala	Lys	His	Gly	Phe	Thr	Ala	Glu	Gln	Thr	Leu	Glu
	305				310					315					320
Ile	Ala	Gln	Lys	Leu	Tyr	Glu	Lys	Lys	Leu	Ile	Thr	Tyr	Pro	Arg	Thr
				325					330					335	
Gly	Ser	Arg	Tyr	Ile	Pro	Glu	Asp	Val	Phe	Val	Glu	Ile	Pro	Lys	Leu

340	345	350
Leu Ala Phe Ile Gly Ser Leu Pro Glu Trp Lys Gly Lys Val Asn Pro		
355	360	365
Lys Ala Met Pro Thr Arg Arg Ser Val Asp Gly Gly Lys Val Thr Asp		
370	375	380
His His Ala Leu Leu Val Thr Gly Glu Lys Pro Leu Phe Leu Ser Lys		
385	390	395
Glu Asp Asn Thr Val Tyr Gln Met Ile Ala Gly Arg Met Ile Glu Ala		
405	410	415
Phe Ser Glu Lys Cys Val Lys Asp Thr Ala Thr Val Thr Ala Glu Cys		
420	425	430
Ala Gly Ala Glu Phe Val Ala Lys Gly Ser Ile Ile Lys Gln Ala Gly		
435	440	445
Trp Arg Ala Val Tyr Gly Glu Glu Glu Lys Glu Glu Thr Ile Ile Pro		
450	455	460
Gly Trp Gln Glu Gly Asp Thr Leu Thr Leu Lys Ala Ala Ser Ile Thr		
465	470	475
Glu Gly Lys Thr Lys Pro Lys Pro Leu His Thr Glu Ala Thr Leu Leu		
485	490	495
Ser Ala Met Glu Thr Ala Gly Lys Glu Ile Glu Asp Asp Ala Leu Arg		
500	505	510
Gln Ala Leu Lys Asp Cys Gly Ile Gly Thr Pro Ala Thr Arg Ala Ala		
515	520	525
Ile Ile Glu Thr Leu Phe Lys Arg Gly Tyr Met Glu Arg Cys Lys Lys		
530	535	540
Ser Leu Val Pro Thr Glu Lys Gly Leu Ala Leu Tyr Ser Val Val Lys		
545	550	555
Thr Met Arg Ile Ala Asp Val Ala Met Thr Gly Glu Trp Glu Lys Glu		
565	570	575
Leu Ala Arg Ile Glu Arg Gly Glu Leu Pro Ala Asp Thr Phe Arg Lys		
580	585	590
Glu Ile Glu Ala Tyr Thr Gln Glu Ile Thr Ser Glu Leu Leu Ser Cys		
595	600	605
Asp Lys Leu Phe Ala Arg Arg Asp Ser Gly Cys Lys Cys Pro Lys Cys		
610	615	620
Gly Thr Gly Ser Met Gln Phe Tyr Gly Lys Val Arg Cys Asp Asn		
625	630	635
Ala Glu Cys Gly Leu Pro Val Phe Arg Leu Lys Ala Asn Arg Thr Leu		
645	650	655
Thr Asp Asp Glu Ile Lys Asp Leu Leu Thr Asp Gly His Thr Lys Leu		
660	665	670
Leu Lys Gly Phe Lys Ser Lys Gln Gly Lys Ser Phe Asp Ala Val Val		
675	680	685
Ala Phe Asp Gly Asp Tyr Asn Thr Thr Phe Val Phe Pro Glu Arg Lys		
690	695	700
Thr Thr Lys Lys Phe Ser Gly Arg Lys Lys		
705	710	

<210> 6891  
 <211> 159  
 <212> PRT  
 <213> B.fragilis

<400> 6891  
 Phe Thr Asn Pro Leu Asn Ser Lys Val Met Asn Asn Lys Lys Lys Asn  
 1 5 10 15  
 Glu Gly Gln Thr Asp Phe Ser Tyr Tyr Gly Leu Tyr Leu Leu Asp Tyr  
 20 25 30  
 Leu Arg Thr Asn Lys Phe Glu Gln Ala Thr Asp Glu Ala Phe Ile Arg

35	40	45
Glu Arg Ala Asp Arg Ala Ala Gly Thr Tyr Glu Trp Ala Met Leu Glu		
50	55	60
Gly Tyr Pro Ala Asp Gly Ala Gln Glu Leu Ala Met Arg Thr Leu Leu		
65	70	75
Glu Gly Leu His Tyr Ser Lys Tyr Ala Ile Leu Arg Glu Val Val Glu		80
	85	90
Asn Glu Phe Ser Asp Asp Val Pro Glu Ala Lys Arg Glu Ser Phe Thr		95
	100	105
Arg Lys Leu Leu Pro Leu Val Gly Asn Val Phe Ser Ile Tyr Asp Leu		110
	115	120
Ser Asp Asp Asn Phe Ala Leu Ser Pro Asp Tyr Asp Leu Leu Tyr Thr		125
	130	135
Glu Leu Thr Gly Ala Val Val Leu Tyr Ile Glu Glu Tyr Gly Val		140
145	150	155

&lt;210&gt; 6892

&lt;211&gt; 110

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6892

Ser Gly Asp Pro Pro Pro Val Asp Lys Val Ser Gly Met Ala Pro Cys		
1	5	10
Arg Ser Gln Phe His Gln Pro Val Phe Ala Val Pro Gly Val Gln Arg		15
	20	25
Glu Gly Leu Pro Tyr Glu Asp Gly Arg Arg Cys Arg Ala Glu Ala Asp		30
	35	40
Thr Tyr Pro Leu Val Asp Ala Asp His Val Lys Asp Asp Glu Gln Asp		45
	50	55
Glu Glu Ser Gln Gln Thr Ser Ala Glu Asp Glu Glu Val Leu Ser Leu		60
65	70	75
Gln Thr Leu Glu Leu Asp Arg Thr Ala Asp Thr Leu Val Tyr Arg Val		80
	85	90
Phe Ser His Thr Leu Phe Ile Lys Gly Arg Met Ser Ala Gly		95
	100	105
		110

&lt;210&gt; 6893

&lt;211&gt; 300

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6893

Asn Met Met Phe Phe Lys Arg Thr Phe Lys Lys Thr Tyr Gln Asn Gln		
1	5	10
Arg Met Met Lys Leu Val Arg Met Thr Gly Gly Leu Gly Asn Gln Met		15
	20	25
Phe Ile Tyr Ala Phe Tyr Ile Gln Met Lys Thr Ile Phe Pro Glu Leu		30
	35	40
Arg Ile Asp Met Ser Glu Met Lys Lys Tyr Lys Leu His Asn Gly Tyr		45
	50	55
Glu Leu Glu Asp Val Phe Ser Ile Arg Pro Gln Thr Ile Ser Ala His		60
65	70	75
Lys Trp Leu Lys Arg Val Ile Val Tyr Ala Phe Phe Ser Ile Ile Arg		80
	85	90
Glu Lys Ser Glu Glu Glu Leu Ser Ile His Lys Tyr Thr Gln His Lys		95
	100	105
Arg Trp Thr Leu Val Tyr Tyr Lys Gly Phe Phe Gln Ser Glu Leu Phe		110
	115	120
		125

Phe	Lys	Glu	Ser	Ser	Asp	Thr	Ile	Arg	Asp	Ile	Phe	Ser	Phe	Asn	Thr
130						135					140				
Glu	Asn	Ala	Asn	Phe	Arg	Thr	Lys	Glu	Trp	Ala	Lys	Ile	Ile	Lys	Glu
145					150					155					160
Gln	Arg	Ser	Ser	Val	Ser	Ile	His	Ile	Arg	Arg	Gly	Asp	Tyr	Thr	Ser
				165					170					175	
Ala	Lys	Asn	Lys	Ile	Lys	Tyr	Gly	Asn	Ile	Cys	Thr	Lys	Glu	Tyr	Tyr
			180					185					190		
Gln	Lys	Ala	Ile	Ser	Ile	Ile	Leu	Lys	Lys	Glu	Pro	Lys	Ala	Phe	Phe
		195					200					205			
His	Ile	Phe	Ser	Asp	Asp	Val	Glu	Trp	Thr	Lys	Ala	His	Leu	Lys	Ile
	210					215					220				
His	His	Leu	Pro	His	Gln	Tyr	Ile	Ser	Trp	Asn	Arg	Gly	Pro	Asp	Ser
225					230					235					240
Trp	Gln	Asp	Met	Met	Leu	Met	Ser	Leu	Cys	Arg	His	Asn	Ile	Ile	Ala
				245					250					255	
Asn	Ser	Ser	Phe	Ser	Trp	Trp	Gly	Ala	Trp	Leu	Asn	Ala	Tyr	Lys	Asp
			260					265					270		
Lys	Thr	Val	Ile	Ala	Pro	Ser	Arg	Trp	Ser	Asn	Val	Lys	Lys	Thr	Pro
		275					280					285			
His	Ile	Leu	Pro	Glu	Ser	Trp	Ile	Ser	Ile	Asp	Ile				
	290					295					300				

<210> 6894  
 <211> 300  
 <212> PRT  
 <213> B.fragilis

<400> 6894

Leu	Asn	Asn	Pro	His	Thr	Thr	Met	Lys	Val	Ser	Ile	Ile	Ile	Leu	Asn
1				5				10						15	
Tyr	Asn	Thr	Ser	Arg	Leu	Thr	Leu	Asn	Cys	Ile	Asn	Ser	Ile	His	Lys
		20						25					30		
Tyr	Leu	Pro	Asn	Gly	Thr	Tyr	Glu	Ile	Ile	Val	Val	Asp	Asn	Ala	Ser
		35					40					45			
Gln	Glu	Thr	Asp	Tyr	Gln	His	Leu	Thr	Glu	Asn	Leu	Ser	Gly	Gln	Glu
	50					55					60				
Ile	Thr	Ile	Ile	Arg	Asn	Lys	Ile	Asn	Ser	Gly	Phe	Gly	Ala	Gly	Asn
65					70					75					80
Met	Val	Gly	Ala	Asn	Ile	Ala	Gln	Gly	Lys	Tyr	Leu	Cys	Phe	Leu	Asn
				85					90					95	
Asn	Asp	Thr	Glu	Leu	Leu	Glu	Asp	Cys	Ile	Ser	Pro	Leu	Cys	Ser	Tyr
			100					105					110		
Leu	Lys	Glu	Asn	Pro	Gln	Thr	Gly	Cys	Ile	Thr	Pro	Gln	Gln	Tyr	Asn
		115					120						125		
Lys	His	Leu	Lys	Ala	Val	Pro	Ser	Phe	Asn	His	Pro	Ile	Gly	Ile	Leu
	130					135					140				
Tyr	Glu	Ile	Leu	Gly	Asn	Asp	Ile	Pro	Glu	Arg	Leu	Cys	Pro	Ala	Arg
145					150					155					160
Tyr	Pro	Lys	Arg	Lys	Lys	Lys	Val	Tyr	Gln	Phe	Pro	Ile	His	Ala	Ser
				165					170					175	
Trp	Ile	Asn	Gly	Ala	Phe	Met	Met	Phe	Pro	Ser	Glu	Val	Phe	Phe	Lys
			180					185					190		
Ile	Lys	Gly	Phe	Asp	Thr	Asn	Ile	Phe	Leu	Tyr	Tyr	Glu	Glu	Tyr	Asp
		195					200					205			
Ile	Cys	Thr	Arg	Leu	Ser	Tyr	His	Asn	Tyr	Gln	Ser	Thr	Val	Leu	Pro
	210					215					220				
Thr	Tyr	Arg	Phe	Leu	His	Leu	Gln	Gly	Glu	Ser	Thr	Lys	Val	Tyr	Ala
225					230					235					240

Leu	Ala	Tyr	Lys	Glu	Arg	Phe	Ile	Ser	Lys	Leu	Tyr	Val	Tyr	Lys	Lys
				245					250					255	
His	Ser	Asn	Phe	Leu	Phe	Tyr	Ile	Ile	Tyr	Lys	Trp	Ile	Ile	Ile	Ile
			260					265				270			
Lys	Leu	Cys	Phe	His	Phe	Arg	Arg	Trp	Tyr	Ile	Leu	Pro	Thr	Ile	Ile
		275				280						285			
Leu	Gly	Lys	Gly	Leu	Ser	Gln	Ser	Met	Arg	His	Lys				
	290					295					300				

&lt;210&gt; 6895

&lt;211&gt; 168

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6895

Lys	Ala	Leu	Pro	Glu	Pro	Ser	Leu	Glu	Ser	Ser	Val	Asp	Cys	Thr	Leu
1				5				10					15		
Leu	Phe	Cys	Thr	Leu	Pro	Asn	Glu	Arg	Lys	Lys	Thr	Met	Gly	Lys	Val
			20					25					30		
Gln	Ile	Leu	Ala	Val	Leu	Thr	Met	Asp	Gly	Cys	His	Ser	Ser	Glu	Leu
		35					40					45			
Tyr	Gly	Lys	Ala	Tyr	Glu	Asp	Leu	Arg	Leu	Asp	Arg	Cys	Asp	Ile	Asp
	50					55					60				
Lys	Ile	Arg	Glu	Asn	Ala	Leu	Tyr	His	Val	Thr	Pro	Asp	Tyr	Ser	Ile
65				70					75						80
Ser	Met	Leu	Asp	Glu	Trp	Arg	Lys	Asp	Asn	Thr	Asn	Ile	Cys	Tyr	Leu
				85					90					95	
Ala	Glu	Ala	Thr	Pro	Asp	Asn	Ser	Asp	Tyr	Ile	Asn	Gly	Leu	Leu	Arg
			100					105					110		
Met	Arg	Val	Val	Asp	Glu	Ile	Ile	Leu	Tyr	Thr	Val	Pro	Phe	Ile	Ser
		115					120					125			
Gly	Thr	Gly	Arg	His	Phe	Phe	Lys	Ser	Ala	Leu	Pro	Glu	Ala	Arg	Trp
	130					135					140				
Thr	Leu	Ser	Ser	Gln	Lys	Ser	Tyr	Ser	Asn	Gly	Val	Tyr	Arg	Ser	Ile
145				150						155					160
Tyr	Thr	Arg	Met	Glu	Thr	Met	Lys								
				165											

&lt;210&gt; 6896

&lt;211&gt; 1022

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6896

Ser	Ser	Lys	Pro	Asp	Arg	Met	Lys	Glu	Ala	Leu	Thr	Thr	Asn	Gln	Val
1				5				10						15	
Val	Ile	Val	Leu	Val	Glu	His	Pro	Val	Leu	Gly	Leu	Leu	Leu	Val	Pro
			20					25					30		
Tyr	Thr	Val	Gly	Arg	Ala	Leu	Asp	Asn	Thr	Leu	Glu	Val	Ile	Glu	Gln
		35					40					45			
Ala	Phe	His	Ala	Ser	Pro	Asp	Ala	Leu	Lys	Lys	Met	Asn	Glu	Ala	Glu
	50					55					60				
Gln	Lys	Ala	Ile	Asp	Ile	Ala	Ser	His	Tyr	Thr	Glu	Lys	Tyr	Leu	Met
65				70					75						80
Gly	Val	Tyr	Ser	Arg	Glu	Lys	Thr	Val	Pro	Lys	Phe	Leu	Arg	Lys	Leu
				85				90						95	
Thr	Glu	Asp	Ser	Asn	Lys	Leu	Lys	Gln	Gln	Ile	Arg	Pro	Phe	Ile	Glu
			100					105					110		
Lys	Lys	Leu	Leu	Glu	Met	Leu	Glu	Leu	Ile	Cys	Asn	Gly	Gln	Leu	Pro



[illegible]

Ile	Ala	Pro	Gln	Val	Pro	Gln	Ile	Pro	Glu	Pro	Val	Gln	Lys	Gln	Asn
	595						600					605			
Arg	Ile	Ser	Pro	Leu	His	Gly	Thr	Leu	Ile	Val	Val	Pro	Thr	Ser	Leu
	610					615					620				
Leu	His	Asn	Trp	Lys	Arg	Glu	Ala	Ser	Arg	Phe	Thr	Asn	Leu	Ser	Met
625					630					635					640
Met	Glu	Tyr	Asn	Gly	Ser	Ser	Pro	Asn	Glu	Ile	Thr	Arg	Leu	Lys	Lys
			645						650					655	
Tyr	Phe	Asp	Arg	Tyr	His	Leu	Ile	Phe	Thr	Thr	Tyr	Gly	Thr	Met	Arg
			660					665					670		
Asn	Asn	Ile	Ala	Thr	Leu	Ser	Gln	Tyr	Thr	Phe	Glu	Cys	Ile	Val	Leu
		675					680					685			
Asp	Glu	Ser	Gln	Asn	Ile	Lys	Asn	Ser	Glu	Ser	Leu	Thr	Phe	Arg	Ser
	690					695					700				
Ala	Ile	Gln	Leu	Arg	Ser	Lys	His	Arg	Leu	Ile	Leu	Thr	Gly	Thr	Pro
705					710					715					720
Ile	Glu	Asn	Ser	Leu	Lys	Asp	Leu	Trp	Ala	Gln	Phe	His	Phe	Leu	Gln
				725					730					735	
Pro	Glu	Leu	Leu	Gly	Asn	Glu	Thr	Thr	Phe	Ser	Lys	His	Phe	Ile	Asn
			740				745						750		
Ala	Ile	Arg	Gln	Gly	Asp	Glu	Arg	Met	Lys	Asp	Arg	Leu	Arg	Gln	Leu
	755					760						765			
Ile	Thr	Pro	Phe	Ile	Leu	Arg	Arg	Ser	Lys	Gln	Glu	Val	Thr	Pro	Glu
	770					775					780				
Leu	Pro	Ser	Leu	Thr	Glu	Glu	Val	Val	Tyr	Cys	Asp	Met	Thr	Glu	Arg
785					790				795						800
Gln	Asn	Glu	Leu	Tyr	Gln	His	Glu	Lys	Asn	Ser	Leu	Arg	Asn	Ile	Leu
				805					810					815	
Leu	Glu	Gln	Thr	Ala	Glu	Lys	Gly	Gln	Gln	Ser	Phe	Thr	Val	Leu	Asn
			820					825					830		
Gly	Ile	Leu	Arg	Leu	Arg	Gln	Leu	Ser	Cys	His	Pro	Gln	Leu	Val	Leu
	835					840						845			
Pro	Asp	Phe	Ile	Gly	Asp	Ser	Gly	Lys	Leu	Tyr	Gln	Ile	Ile	Glu	Thr
	850					855					860				
Phe	Glu	Thr	Leu	Arg	Ser	Glu	Gly	His	Lys	Val	Leu	Ile	Phe	Ser	Ser
865					870					875					880
Phe	Val	Lys	His	Leu	Glu	Leu	Val	Ala	Gly	Glu	Phe	Arg	Lys	Arg	Lys
			885						890					895	
Trp	Asp	Tyr	Ala	Phe	Leu	Thr	Gly	Ser	Ser	Thr	Asn	Arg	Pro	Glu	Glu
			900					905					910		
Ile	Ala	Arg	Phe	Asn	Arg	Asp	Pro	Lys	Ile	Gln	Ala	Phe	Leu	Ile	Ser
	915						920					925			
Leu	Lys	Ala	Gly	Gly	Val	Gly	Leu	Asn	Leu	Thr	Gln	Ala	Asp	Tyr	Val
	930					935					940				
Phe	Ile	Ile	Asp	Pro	Trp	Trp	Asn	Pro	Ala	Ala	Glu	Ser	Gln	Ala	Ile
945					950					955					960
Ala	Arg	Ala	His	Arg	Ile	Gly	Gln	Asn	Asn	Gln	Val	Ile	Ala	Tyr	Arg
			965						970					975	
Phe	Ile	Thr	Gln	Gly	Ser	Ile	Glu	Glu	Lys	Ile	Ile	Gln	Leu	Gln	Glu
			980					985					990		
Glu	Lys	Arg	Lys	Leu	Ala	Glu	Thr	Phe	Ile	Thr	Asp	Thr	Glu	Gln	Leu
	995						1000					1005			
Pro	Ala	Leu	Thr	Asn	Arg	Glu	Trp	Ala	Arg	Leu	Leu	Gly	Ser		
	1010					1015					1020				

&lt;210&gt; 6897

&lt;211&gt; 388

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6897

Lys Pro Asp Thr Arg Ser Cys Phe Ile Arg Thr Glu Ile Glu Asn Asn  
 1 5 10 15  
 Asn Asn Gln Arg Leu Thr Lys Thr Thr Lys Phe Tyr Leu Pro Leu  
 20 25 30  
 Lys Ser Lys Val Met Arg Lys Val Ile Ile Met Phe Ala Leu Ala Met  
 35 40 45  
 Asp Ile Val Thr Ala Asn Ala Gln Glu Asn Val Thr Val Gly Thr Asp  
 50 55 60  
 Asn Gly Ser Glu Pro Thr Asn Glu Ala Arg Ala Glu Ala Ser Ser Leu  
 65 70 75 80  
 Asp Tyr Ala Ser Gln Gly Gly Gly Arg Gln Ser Gln Gln Pro Thr Leu  
 85 90 95  
 Thr Lys Glu Val Tyr Pro Gln Lys Lys Ala Asp Gly Asp Leu Tyr His  
 100 105 110  
 Gly Leu Thr Lys Lys Leu Thr Phe Asp Arg Met Val Pro Pro His Gly  
 115 120 125  
 Leu Glu Val Thr Tyr Asp Lys Thr Val His Val Ile Phe Pro Ser Glu  
 130 135 140  
 Val Arg Tyr Val Asp Leu Gly Ser Pro Asp Leu Ile Ala Gly Lys Ala  
 145 150 155 160  
 Asp Gly Ala Glu Asn Val Ile Arg Val Lys Ala Thr Val Arg Asn Phe  
 165 170 175  
 Pro Asn Glu Thr Asn Met Ser Val Ile Thr Glu Asp Gly Ser Phe Tyr  
 180 185 190  
 Thr Phe Asn Val Lys Tyr Ala Ala Glu Pro Leu Leu Leu Asn Val Glu  
 195 200 205  
 Met Cys Asp Phe Ile His Asp Gly Glu Lys Val Asn Cys Pro Asn Asn  
 210 215 220  
 Ala Gln Glu Ile Tyr Leu Lys Glu Leu Gly Ser Glu Ser Pro Met Leu  
 225 230 235 240  
 Val Arg Leu Ile Met Lys Ser Ile His Lys Gln Asn Lys Arg Glu Val  
 245 250 255  
 Lys His Ile Gly Cys Lys Arg Phe Gly Ile Gln Tyr Leu Leu Lys Gly  
 260 265 270  
 Ile Tyr Thr His Asn Gly Leu Leu Tyr Phe His Thr Glu Ile Lys Asn  
 275 280 285  
 Gln Ser Asn Val Pro Phe Asp Val Asp Tyr Ile Thr Trp Lys Ile Val  
 290 295 300  
 Asp Lys Lys Val Ala Lys Arg Thr Ala Val Gln Glu Gln Ile Ile Leu  
 305 310 315 320  
 Pro Leu Arg Ala Gln Asn Tyr Ala Thr Leu Val Pro Gly Lys Lys Ser  
 325 330 335  
 Glu Arg Thr Val Phe Thr Met Ala Lys Phe Thr Ile Pro Asp Asp Lys  
 340 345 350  
 Cys Leu Val Val Glu Leu Asn Glu Lys Asn Gly Gly Arg His Gln Ser  
 355 360 365  
 Phe Val Ile Glu Asn Glu Asp Leu Val Arg Ala Asn Thr Ile Asn Glu  
 370 375 380  
 Leu Gln Val Arg  
 385

&lt;210&gt; 6898

&lt;211&gt; 416

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6898

Tyr Ala Val Thr Ile Asp Met Thr Lys Lys Trp Gln Tyr Leu Cys Arg  
 1 5 10 15  
 Cys Leu Leu Val Leu Val Phe Ile Gly Gly Val Ile Pro Ala Lys Ala  
 20 25 30  
 Gln Leu Val Glu Arg Val Cys Arg Thr Asp Tyr Lys Ile Ser Pro Glu  
 35 40 45  
 Arg Lys Gly Glu Leu Leu Leu Glu Leu Asp Asn Ile Ser Phe Phe Lys  
 50 55 60  
 Asp Asn Glu Phe Ala Gly Thr Val Ile Lys Gly Tyr Ser Leu Pro Gly  
 65 70 75 80  
 Leu Trp Ile Gln Pro Lys Phe Val Tyr Tyr Pro Leu Lys Asn Ile Lys  
 85 90 95  
 Leu Glu Gly Gly Val His Met Leu Trp Phe Ser Gly Ala Tyr Arg Tyr  
 100 105 110  
 Pro Ser Val Ser Tyr Gln Asp Ile Ala Leu Trp Lys Gly Glu Gln Tyr  
 115 120 125  
 Gln Lys Gly Ala His Leu Leu Pro Phe Phe Arg Ala Gln Ile Ser Met  
 130 135 140  
 Lys Ser Val Asp Leu Ile Leu Gly Asn Ile Tyr Gly Gly Ser Asn His  
 145 150 155 160  
 Gly Leu Ile Ala Pro Leu Tyr Asn Pro Glu Leu Asn Leu Thr Ala Asp  
 165 170 175  
 Pro Glu Thr Gly Phe Gln Val Leu Ala Gly Ala Pro Trp Ile Asp Leu  
 180 185 190  
 Asp Ala Trp Ile Asp Trp Gln Ser Phe Ile Phe Arg Asp Asp Thr His  
 195 200 205  
 Gln Glu Ala Phe Thr Val Gly Leu Ser Thr Arg Phe Lys Leu Asn Ala  
 210 215 220  
 Pro Ser Ser Thr Phe His Cys Tyr Ile Pro Leu Gln Ile Leu Ala Gln  
 225 230 235 240  
 His Arg Gly Gly Glu Ile Asp Thr Ile Arg Glu Ser Ser Val Gln Thr  
 245 250 255  
 Leu Met Asn Gly Ala Val Gly Ala Gly Val Thr Trp Asn Ile Asp Arg  
 260 265 270  
 Arg Ile Leu Lys Arg Val Asn Val Glu Leu Asp Ala Ala Gly Tyr Tyr  
 275 280 285  
 Gln Gln Lys Gly Glu Leu Trp Pro Tyr His Lys Gly Ile Gly Val Tyr  
 290 295 300  
 Ser Ser Ala Phe Val Asp Leu Gly Asn Phe Arg Val Lys Met Gly His  
 305 310 315 320  
 Trp Ile Cys Asn Asp Phe Ile Thr Met Phe Gly Ile Pro Tyr Phe Gly  
 325 330 335  
 Thr Val Ser Thr Lys Lys Glu Gly Ile Thr Tyr Asp Lys Pro Gln Thr  
 340 345 350  
 Leu Leu Cys Ser Ile Glu Tyr Ser Arg Met Phe Gly Lys His Tyr Ala  
 355 360 365  
 Leu Gly Leu Lys Ala Asp Ala Tyr Gln Phe Phe Pro Gly Thr Met Arg  
 370 375 380  
 Ser Ala Asn Gly Glu Leu Thr Ser Pro Gly Ser Thr Thr Ser Phe Ser  
 385 390 395 400  
 Val Gly Val Tyr Phe Arg Ile Asn Pro Ser Phe Leu Leu Lys Asn Phe  
 405 410 415

&lt;210&gt; 6899

&lt;211&gt; 427

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6899

Asn Cys Gly Thr Phe Lys Arg Asn Ala Gly Lys Met Val Ala Lys Ile  
 1 5 10 15  
 Ser Val Gly Asn Ser Leu Tyr Gly Ala Leu Ala Tyr Asn Gly Glu Lys  
 20 25 30  
 Ile Asn Glu Ala Lys Gly Arg Leu Leu Thr Thr Asn Arg Ile Tyr Asn  
 35 40 45  
 Asp Gly Thr Gly Thr Met Glu Ile His Arg Ala Met Glu Asp Phe Leu  
 50 55 60  
 Ala Leu Met Pro Val Arg Ser Lys Val Glu Lys Pro Val Val His Ile  
 65 70 75 80  
 Ser Leu Asn Pro His Pro Asp Asp Ile Leu Thr Asp Thr Glu Leu Gln  
 85 90 95  
 Asn Ile Ala Arg Glu Tyr Leu Glu Lys Met Gly Phe Gly Asn Gln Pro  
 100 105 110  
 Tyr Leu Val Phe Lys His Glu Asp Ile Asp Arg His His Leu His Ile  
 115 120 125  
 Val Thr Val Arg Val Asp Glu Asn Gly Arg Ser Ile Asp Thr Arg Asn  
 130 135 140  
 Asn Phe Tyr Arg Ser Lys Gln Ile Thr Arg Glu Leu Glu Arg Lys Tyr  
 145 150 155 160  
 Gly Leu His Asp Ala Glu Arg Lys Asn Arg Arg Leu Asp Thr Pro Leu  
 165 170 175  
 His Lys Val Asp Ala Ser Ala Gly Asp Val Lys Lys Gln Ala Gly Asn  
 180 185 190  
 Ile Val Lys Ala Ile Ser Gly Gln Tyr Arg Phe Gln Thr Met Gly Glu  
 195 200 205  
 Tyr Arg Ala Leu Leu Ser Leu Tyr Asn Met Thr Val Glu Glu Ala His  
 210 215 220  
 Gly Asn Val Arg Gly Arg Glu Tyr His Gly Leu Val Tyr Ser Val Thr  
 225 230 235 240  
 Asp Asp Lys Gly Asn Lys Val Gly Asn Pro Phe Lys Ser Ser Leu Phe  
 245 250 255  
 Gly Lys Ser Val Gly Tyr Glu Ala Val Gln Lys Lys Phe Ala Arg Ser  
 260 265 270  
 Lys Gln Glu Ile Lys Asp Arg Lys Leu Ala Asp Met Thr Lys Arg Thr  
 275 280 285  
 Val Leu Ser Val Leu Glu Gly Thr Tyr Asp Lys Glu Lys Phe Val Ala  
 290 295 300  
 Thr Leu Lys Gly Lys Gly Ile Asp Thr Val Leu Arg Tyr Thr Glu Glu  
 305 310 315 320  
 Gly Arg Ile Tyr Gly Ala Thr Phe Ile Asp His Arg Thr Gly Cys Val  
 325 330 335  
 Leu Asn Gly Ser Arg Met Gly Lys Glu Leu Ser Ala Asn Ala Leu Gln  
 340 345 350  
 Glu His Phe Thr Leu Pro Tyr Ala Gly Gln Pro Pro Ile Pro Ile Ser  
 355 360 365  
 Val Pro Val Glu Glu Pro Glu Asn Arg Gln Gly Tyr Ser Gly Gly Glu  
 370 375 380  
 Tyr Glu Ser His Ser Ser Gly Met Asn Leu Phe Ala Pro Glu Gly Ser  
 385 390 395 400  
 Ala Val Asp Ala Glu Glu Ala Phe Ile Arg Ala Met Gln Arg Lys  
 405 410 415  
 Lys Lys Lys Lys Lys Arg Lys Gly Leu Gly Thr  
 420 425

&lt;210&gt; 6900

&lt;211&gt; 837

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6900

Asn Asp Gln Thr Ile Met Glu Thr Leu Lys Glu Lys Phe Glu Ala Leu  
 1 5 10 15  
 Ala His Arg Ile Gln Ser Ser Gly Lys Pro Ala Ala Ala Trp Phe Pro  
 20 25 30  
 Gln Phe Thr Pro Val Thr Leu Leu Asn Ala Glu Asn Trp Trp Glu Ala  
 35 40 45  
 Leu Ala Val Cys Glu Tyr Ala Leu Asp Thr His Glu Asp Glu Ala Leu  
 50 55 60  
 Thr Ala Gly Phe Phe Glu Leu Ile Phe Ser Ala Tyr Asp Cys Asn Val  
 65 70 75 80  
 Glu Val Asp Leu Asn Glu Glu Glu Tyr Ala Tyr Trp Trp Glu Lys Val  
 85 90 95  
 Ile Ser Val Cys Asp Arg Val Ala Val Phe Asn Gly Ala Gly Trp Ser  
 100 105 110  
 Gln Lys Gly Ala Gln Tyr Ser Glu Ala Arg Tyr Gly Lys Arg Asp Leu  
 115 120 125  
 Ser Leu Leu Phe Pro Cys Tyr Glu Lys Ala Ala Glu Met Gly Ser Pro  
 130 135 140  
 Glu Ala Glu Ala Thr Val Ala Tyr Trp Arg Tyr Met Gly Phe Tyr Cys  
 145 150 155 160  
 Glu Gln Asp Arg Ala Glu Gly Glu Arg Arg Phe Ala Ala Leu Ser Ser  
 165 170 175  
 Pro Glu Ala Leu Leu Trp Gly Lys Tyr Arg Ala Tyr Ala Glu Gln  
 180 185 190  
 His Thr Gly Ser Lys Glu Lys Ala Leu Leu Met Arg Lys Glu Leu Leu  
 195 200 205  
 Asp Glu Leu Pro Glu Ser His Arg Leu Arg Ala His Val Tyr Ala Ala  
 210 215 220  
 Met Gly Asp Ala Leu Asp Ile Glu Glu Gly Ser Val Ala Glu Glu Ala  
 225 230 235 240  
 Ala Cys Tyr Glu Lys Ser Leu Glu Leu Val Pro Asn Leu Tyr Ser Leu  
 245 250 255  
 Lys Asn Leu Ala Thr Leu Tyr Phe Arg Tyr Pro Glu Leu Gly Lys Gln  
 260 265 270  
 Lys Glu Leu Ala Phe Glu Leu Trp Glu Lys Ala Trp His Ala Gly Val  
 275 280 285  
 Trp Ser Ala Ala Asn Phe Leu Gly Tyr Asn Tyr Gln Glu Glu Glu Trp  
 290 295 300  
 Leu Asp Met Pro Lys Ala Ile Glu Trp Leu Glu Lys Gly Met Leu Tyr  
 305 310 315 320  
 Cys Glu Ser Tyr Cys Ala Tyr Glu Leu Ala Leu Ile Tyr Leu Tyr Asn  
 325 330 335  
 Asp Glu Tyr Lys Asn Val Glu Arg Gly Leu Met Cys Leu Gln Arg Cys  
 340 345 350  
 Val Asp Asp Asn Tyr Val Glu Ala Ile Glu Thr Leu Ala Asn Val Tyr  
 355 360 365  
 Phe Asn Gly Glu Leu Val Glu Glu Asn Ile Ser Tyr Ala Cys Gln Leu  
 370 375 380  
 Leu Glu Arg Ala Ile Glu Leu Gly Ser Gly Ser Ala Ala Tyr Arg Ile  
 385 390 395 400  
 Gly Trp Met Tyr Glu Arg Gly Leu Leu Ser Glu Glu Pro Asp Tyr Gln  
 405 410 415  
 Lys Ala Met Glu Tyr Tyr Glu Lys Ala Val Ser Met Asp Asn Ala Asp  
 420 425 430  
 Gly Tyr Ala Arg Ala Ala Leu Tyr Leu Ala Asn Gly Tyr Ser Gly Val  
 435 440 445  
 Thr Asp Ala Gly Lys Ser Lys Ala Tyr Tyr Glu Lys Ala Ala Glu Leu

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

450	455	460
Gly Ser Cys Phe Ala Met Val Glu Leu Ala Phe Leu Tyr Glu Asn Gly		
465	470	475
Glu Val Val Glu Gln Ser Tyr Glu Lys Ala Phe Asp Leu Leu Gln Lys		
	485	490
Ala Ala Gly Gln Glu Tyr Pro Tyr Ala Met Tyr Arg Val Gly Leu Tyr		
	500	505
Leu Asp Arg Gly Val Ile Gly Glu Pro Arg Pro Glu Glu Ala Phe Ala		
	515	520
Trp Tyr Ala Lys Ala Ala Glu Arg Gly Asp Gly Asp Ala Ile Phe Ala		
	530	535
Leu Gly Arg Cys Tyr Lys Asn Gly Ile Gly Thr Glu Glu Asn Pro Asp		
545	550	555
Lys Ala Leu Glu Trp Phe Thr Lys Gly Ala Glu Asn Asn Glu Pro Arg		
	565	570
Cys Leu Thr Glu Met Gly Leu Ala Tyr Glu Tyr Gly Ser Gly Ile Glu		
	580	585
Glu Asn Pro His Gln Ala Val Glu Tyr Met Thr Lys Ala Ala Glu Gln		
	595	600
Asn Tyr Gly Tyr Ala Gln Phe Lys Met Gly Asp Tyr Phe Phe Phe Gly		
	610	615
Tyr Gly Ala Cys Pro Glu Asp Asn Lys Gln Ala Val Glu Trp Tyr Glu		
625	630	635
Lys Ala Val Ala Asn Asp Ile Pro Leu Ala Met Leu Arg Met Gly Glu		
	645	650
Tyr Tyr Leu Tyr Asp Tyr Asp Lys Leu Asn Glu Ser Glu Lys Ala Phe		
	660	665
Ser Tyr Phe Lys Lys Ala Ala Glu Ala Glu Cys Tyr Asn Glu Gly Leu		
	675	680
Gly Ile Cys Tyr Glu Met Gly Ile Gly Val Glu Asp Asn Glu Thr Glu		
	690	695
Ala Phe Lys Tyr Tyr Thr Leu Ala Ala Gly Ser Gly Asn Val Met Ser		
705	710	715
Met Tyr Arg Thr Gly Leu Cys Tyr Tyr Asn Gly Val Gly Val Lys Gln		
	725	730
Asn Tyr Thr Glu Ala Tyr Arg Trp Phe Asn Asp Ala Ala Gly Asn Asp		
	740	745
Asn Val Ala Ser Tyr Tyr Tyr Leu Gly Lys Met Leu Met Tyr Gly Glu		
	755	760
Gly Cys Val Pro Asp Ala Glu Ala Gly Leu Gln Trp Leu Met Lys Ala		
	770	775
Ala Glu His Asn Ser Asp Lys Ala Gln Phe Glu Leu Gly Asn Ala Tyr		
785	790	795
Leu Met Gly Asn Gly Val Glu Glu Asn Asp Glu Ile Ala Met Glu Trp		
	805	810
Phe Glu Lys Ala Ala Glu Asn Gly Asn Ala Lys Ala Leu Lys Ile Thr		
	820	825
Gly Arg Arg Gln Arg		
835		

&lt;210&gt; 6901

&lt;211&gt; 103

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6901

His Lys Thr Ala Arg Arg Phe Glu Arg Lys Ser Gly Lys Leu Thr Leu
1 5 10 15
Arg Arg Arg Leu Arg Asp Ala Tyr Ala Met Pro Thr His Ser Val His

	20		25		30										
Ser	Arg	Thr	Leu	Arg	Lys	Arg	Leu	Tyr	Gln	Ser	Arg	Arg	Leu	Lys	Val
	35		40		45										
Val	Trp	Ile	Ala	Arg	Tyr	Phe	Phe	Ala	Pro	Cys	Pro	Thr	Lys	Gly	Lys
	50		55		60										
Arg	Leu	Trp	Val	Lys	Phe	Arg	Phe	Leu	Pro	Ser	Ser	Arg	Trp	Thr	Gly
65				70						75					80
Val	Ile	Leu	Gln	Asn	Tyr	Met	Ala	Lys	Arg	Met	Arg	Ile	Tyr	Ala	Leu
			85						90					95	
Thr	Ala	Ala	Ile	Leu	Thr	Lys									
			100												

<210> 6902  
 <211> 280  
 <212> PRT  
 <213> B.fragilis

	<400> 6902														
Phe	Thr	Asp	Ala	Asp	Met	Tyr	Val	Thr	Ala	Ser	Val	Gln	Glu	Gln	Glu
1			5						10					15	
Asn	Asn	Ser	Ser	Thr	Ile	Lys	Ser	Asn	Arg	Thr	Met	Ser	Asn	Glu	Ile
			20					25					30		
Phe	Val	Ala	Phe	Ala	Thr	Gln	Lys	Gly	Gly	Ile	Gly	Lys	Ser	Thr	Val
	35					40						45			
Thr	Ala	Leu	Ala	Ala	Ser	Tyr	Leu	His	Asn	Val	Gln	Gly	His	Asn	Val
	50					55					60				
Ala	Val	Ile	Asp	Cys	Asp	Ala	Pro	Gln	His	Ser	Ile	His	Gly	Leu	Arg
65				70						75					80
Glu	Arg	Glu	Thr	Lys	Leu	Ile	Asp	Glu	Ser	Leu	Tyr	Phe	Lys	Ala	Leu
				85					90					95	
Ala	Cys	Asp	His	Phe	Arg	Lys	Ile	Lys	Lys	Asn	Ala	Tyr	Pro	Val	Ile
			100					105					110		
Ala	Ser	Asp	Ala	Leu	Asn	Ala	Leu	Asp	Asp	Ala	Glu	Arg	Met	Leu	Ala
	115					120						125			
Glu	Glu	Asp	Ala	Lys	Pro	Asp	Ile	Val	Phe	Phe	Asp	Met	Pro	Gly	Thr
	130					135					140				
Leu	Lys	Ser	Asn	Gly	Val	Val	Lys	Thr	Leu	Ser	Gln	Met	Asp	Tyr	Ile
145				150						155					160
Phe	Ala	Pro	Met	Ser	Ala	Asp	Arg	Phe	Val	Val	Glu	Ser	Thr	Leu	Gln
				165					170					175	
Phe	Ala	Val	Met	Phe	Arg	Asp	Asn	Leu	Met	Thr	Thr	Gly	Gln	Ala	Lys
			180					185					190		
Thr	Lys	Gly	Leu	Tyr	Leu	Phe	Trp	Thr	Met	Val	Asp	Gly	Arg	Glu	Lys
	195					200						205			
Asn	Gly	Leu	Tyr	Asp	Leu	Tyr	Glu	Asp	Val	Ile	Ala	Glu	Met	Gly	Leu
	210					215					220				
Ser	Val	Leu	Ser	Thr	Arg	Leu	Pro	Asp	Ser	Lys	Lys	Phe	Arg	Arg	Asp
225					230					235					240
Leu	Ser	Glu	Glu	Arg	Lys	Ser	Val	Phe	Arg	Ser	Thr	Ile	Phe	Pro	Met
				245					250					255	
Asp	Val	Ser	Leu	Lys	Gly	Ser	Gly	Ile	Arg	Glu	Phe	Ser	Glu	Glu	
		260					265						270		
Ile	Ser	Arg	Ile	Ile	Lys	Pro	Gln								
		275					280								

<210> 6903  
 <211> 1951  
 <212> PRT  
 <213> B.fragilis



&lt;400&gt; 6903

Arg Asn Met Ala Phe Asn Arg Lys Gln Arg Leu Arg Asp Asn Ile Glu  
 1 5 10 15  
 Ala Ile Arg Thr Ala Phe Val Leu Asp Arg Glu Gln Arg Thr Pro Thr  
 20 25 30  
 Ala Arg Glu Arg Leu Leu Leu Glu Arg Tyr Cys Gly Phe Gly Gly Leu  
 35 40 45  
 Lys Cys Ile Leu Asn Pro Ala Lys Glu Leu Thr Asp Ala Val His Trp  
 50 55 60  
 Ala Lys Ser Asp Leu Glu Leu Phe Ala Pro Thr Val Glu Leu His Lys  
 65 70 75 80  
 Leu Leu Arg Glu Asn Thr Lys Asp Asp Thr Glu Tyr Lys Gln Cys Met  
 85 90 95  
 Asp Ala Met Lys Gln Ser Val Leu Thr Ala Phe Tyr Thr Pro Pro Glu  
 100 105 110  
 Ile Thr Gly Thr Ile Ala Asp Val Leu His Glu His Gly Ile Arg Pro  
 115 120 125  
 Asp Arg Val Leu Glu Pro Ser Ala Gly Val Gly Ala Phe Val Asp Ala  
 130 135 140  
 Val Leu Glu Asn Lys Pro Asp Ala Asp Ile Met Ala Phe Glu Lys Asp  
 145 150 155 160  
 Leu Met Thr Gly Lys Ile Leu Arg His Leu His Pro Asp Gln Lys Val  
 165 170 175  
 Arg Ile Gln Gly Tyr Glu Lys Ile Glu Lys Pro Phe Met Asn His Phe  
 180 185 190  
 Asp Leu Ala Ile Ser Asn Ile Pro Phe Gly Asp Val Ala Val Phe Asp  
 195 200 205  
 Pro Glu Phe Thr Asn Ser His Asp Pro Ala Arg His Ser Ala Ala Arg  
 210 215 220  
 Thr Ile His Asn Tyr Phe Phe Leu Lys Ser Leu Asp Ala Val Arg Glu  
 225 230 235 240  
 Gly Gly Ile Val Ala Phe Ile Thr Ser Gln Gly Val Leu Asp Ala Pro  
 245 250 255  
 Thr Asn Glu Pro Ile Arg Glu Tyr Met Met Asn His Ala Asn Leu Val  
 260 265 270  
 Gly Val Ala Arg Leu Pro Asn Asn Leu Phe Thr Glu Asn Ala Gly Thr  
 275 280 285  
 Glu Val Gly Ser Asp Leu Ile Ile Leu Gln Lys Asn Ser Gly Lys Asn  
 290 295 300  
 Gly Glu Leu Tyr Tyr Asn Glu Lys Leu Phe Val Gln Thr Glu Gln Thr  
 305 310 315 320  
 Pro Ile Gly Thr Ser Val Asn Gly Tyr Val Trp Ser Ile Gly Ser Leu  
 325 330 335  
 Ser His Thr Asp Leu Thr Lys Ser Thr Asp Pro Tyr Gly Lys Pro Ala  
 340 345 350  
 Tyr Lys Leu Met His Arg Gly Asp Thr Val Gln Leu Ala Glu Asp Leu  
 355 360 365  
 Arg Glu His Leu Lys Ile Glu Leu His Gln Leu Asp Arg Glu Leu Tyr  
 370 375 380  
 Glu Lys His Ser Leu His Ser Ala Gln Val Glu Ser Thr Asp Lys Ser  
 385 390 395 400  
 Thr Pro Glu Glu Val Gln Pro Ser Pro Lys Val Glu Ala Val Thr Ser  
 405 410 415  
 Thr Ala Asn Val Phe Ile Thr Glu Ala Glu Lys Pro Lys Val Gln Pro  
 420 425 430  
 Ile Asp Glu Lys Pro Glu Ile Glu Pro Arg Gln Thr Asn His Ser Asn  
 435 440 445  
 Ala Val Gln Leu Thr Leu Leu Asp Leu Trp Gly Met Pro Ile Glu Glu

[illegible]

Met	Lys	Ile	Thr	Asp	Glu	Phe	Leu	Val	Lys	Gly	Tyr	Arg	Asn	Tyr	
930						935					940				
Asp	Gly	Met	His	Leu	Leu	Lys	His	Ala	Leu	His	Asn	Thr	Cys	Pro	Asp
945					950					955					960
Met	Met	Lys	Ser	Ile	Gly	Arg	Asp	Glu	His	Gly	Asn	Asp	Ile	Lys	Val
				965					970					975	
Arg	Asp	Ser	Glu	Gly	Ile	Gln	Leu	Ala	Asn	Ala	Lys	Ile	Asp	Glu	Ile
			980					985					990		
Arg	Asn	Gly	Phe	Ser	Glu	Trp	Leu	Glu	Glu	Gln	Ser	Pro	Gln	Phe	Lys
		995				1000						1005			
Glu	Arg	Leu	Thr	Thr	Met	Tyr	Asn	Arg	Lys	Phe	Asn	Cys	Phe	Val	Arg
1010						1015						1020			
Pro	Lys	Tyr	Asp	Gly	Ser	His	Gln	Thr	Phe	Pro	Asp	Leu	Asn	Leu	Lys
1025					1030					1035					1040
Gly	Leu	Ala	Ser	Arg	Gly	Ile	Arg	Ser	Val	Tyr	Pro	Ser	Gln	Met	Asp
				1045					1050					1055	
Cys	Val	Trp	Met	Leu	Lys	Gln	Asn	Gly	Gly	Gly	Ile	Cys	Asp	His	Glu
			1060					1065					1070		
Val	Gly	Thr	Gly	Lys	Thr	Leu	Ile	Met	Cys	Ile	Ala	Ala	His	Glu	Met
		1075					1080					1085			
Lys	Arg	Leu	Asn	Leu	Ala	His	Lys	Pro	Met	Ile	Ile	Gly	Leu	Lys	Ala
1090						1095						1100			
Asn	Val	Ala	Glu	Ile	Ala	Ala	Thr	Tyr	Gln	Ala	Ala	Tyr	Pro	Asn	Ala
1105					1110					1115					1120
Arg	Ile	Leu	Tyr	Ala	Ser	Glu	Lys	Asp	Phe	Ser	Thr	Ala	Asn	Arg	Val
				1125					1130					1135	
Arg	Phe	Phe	Asn	Asn	Ile	Lys	Asn	Asn	Asp	Tyr	Asp	Cys	Val	Ile	Met
			1140					1145					1150		
Ser	His	Asp	Gln	Phe	Gly	Lys	Ile	Pro	Gln	Ser	Pro	Glu	Leu	Gln	Gln
		1155					1160					1165			
Arg	Ile	Leu	Gln	Ala	Glu	Leu	Asp	Thr	Val	Glu	Glu	Asn	Leu	Glu	Val
		1170					1175					1180			
Leu	Arg	Gln	Gln	Gly	Lys	Asn	Val	Ser	Arg	Ala	Met	Leu	Lys	Gly	Leu
1185					1190					1195					1200
Glu	Lys	Arg	Lys	His	Asn	Leu	Glu	Ala	Lys	Leu	Glu	Lys	Val	Glu	His
				1205						1210				1215	
Ala	Ile	Lys	Ser	Arg	Thr	Asp	Asp	Val	Val	Asp	Phe	Lys	Gln	Met	Gly
			1220					1225					1230		
Ile	Asp	His	Ile	Phe	Ile	Asp	Glu	Ser	His	Gln	Phe	Lys	Asn	Leu	Thr
		1235					1240					1245			
Phe	Asn	Thr	Arg	His	Asp	Arg	Val	Ala	Gly	Leu	Gly	Asn	Ser	Glu	Gly
		1250				1255					1260				
Ser	Gln	Lys	Ala	Leu	Asn	Met	Leu	Phe	Ala	Ile	Arg	Thr	Ile	Gln	Glu
1265					1270										

1395	1400	1405
Thr Gly Asp Ala Thr Leu Leu Gly Arg Leu Pro Leu Ser Glu Thr Glu		
1410	1415	1420
Glu Lys Ala Lys Met Leu Ile Ala Thr Asp Tyr Ala Arg Lys Met Ala		
1425	1430	1435
Leu Asp Met Arg Met Ile Asp Pro His Tyr Glu Asp His Pro Asp Asn		
1445	1450	1455
Lys Ala Ser His Cys Ala Lys Ile Ile Ala Glu Tyr Tyr Gln Lys Tyr		
1460	1465	1470
Asp Ala Gln Lys Gly Thr Gln Phe Val Phe Ser Asp Leu Gly Thr Tyr		
1475	1480	1485
Gln Pro Gly Asp Gly Trp Asn Val Tyr Ser Glu Ile Lys Arg Lys Leu		
1490	1495	1500
Thr Glu Asp Tyr Gly Ile Pro Pro Ser Glu Val Arg Phe Ile Gln Glu		
1505	1510	1515
Cys Lys Thr Asp Lys Ala Arg Lys Ala Val Ile Asp Ala Met Asn Ala		
1525	1530	1535
Gly Thr Val Arg Val Leu Phe Gly Ser Thr Ser Met Leu Gly Thr Gly		
1540	1545	1550
Val Asn Ala Gln Lys Arg Cys Val Ala Ile His His Leu Asp Thr Pro		
1555	1560	1565
Trp Arg Pro Ser Asp Leu Gln Gln Arg Asp Gly Arg Gly Val Arg Ala		
1570	1575	1580
Gly Asn Glu Ile Ala Lys His Phe Ala Gly Asn Asn Val Asp Val Ile		
1585	1590	1595
Ile Tyr Ala Val Glu Lys Ser Leu Asp Ser Tyr Lys Phe Asn Leu Leu		
1605	1610	1615
His Cys Lys Gln Thr Phe Ile Ser Gln Leu Lys Ser Gly Ala Met Glu		
1620	1625	1630
Ala Arg Thr Ile Asp Glu Gly Ala Met Asp Glu Lys Ser Gly Met Asn		
1635	1640	1645
Phe Ser Glu Tyr Met Ala Leu Leu Ser Gly Asn Thr Asp Leu Leu Asp		
1650	1655	1660
Lys Ala Lys Leu Glu Lys Arg Ile Ala Ser Leu Glu Gly Glu Arg Lys		
1665	1670	1675
Ser Phe Asn Lys Gly Lys Arg Asp Ser Glu Phe Lys Leu Glu Ser Lys		
1685	1690	1695
Thr Arg Glu Leu Gly Asn Asn Thr Ala Phe Ile Asp Ala Met Thr Glu		
1700	1705	1710
Asp Trp Asn Arg Phe Leu Ser Val Val Gln Thr Asp Lys Glu Gly Asn		
1715	1720	1725
His Leu Asn Ile Ile Lys Val Asp Gly Val Asp Ser Ala Asp Glu Lys		
1730	1735	1740
Val Ile Gly Lys Arg Leu Gln Glu Ile Ala Lys Asn Ala Thr Thr Gly		
1745	1750	1755
Gly Leu Tyr Thr Gln Val Gly Glu Phe Tyr Gly Phe Pro Ile Lys Val		
1765	1770	1775
Val Ser Glu Arg Ile Leu Lys Glu Gly Leu Glu Phe Thr Asp Asn Arg		
1780	1785	1790
Phe Val Val Glu Gly Asn Tyr Lys Tyr Thr Tyr Asn Asn Gly His Leu		
1795	1800	1805
Ala Leu Ala Asp Pro Leu Ala Ala Ala Arg Asn Phe Leu Asn Ala Ile		
1810	1815	1820
Glu Arg Ile Pro Ser Ile Ile Asp Gln Tyr Lys Ala Lys Asn Glu Val		
1825	1830	1835
Leu Glu Arg Glu Ile Pro Gln Leu Gln Glu Ile Ala Gly Lys Val Trp		
1845	1850	1855
Lys Lys Glu Glu Glu Leu Lys Gln Leu Lys Ser Glu Leu Ala Ala Leu		
1860	1865	1870

1395 1400 1405  
1410 1415 1420  
1425 1430 1435  
1445 1450 1455  
1460 1465 1470  
1475 1480 1485  
1490 1495 1500  
1505 1510 1515  
1525 1530 1535  
1540 1545 1550  
1555 1560 1565  
1570 1575 1580  
1585 1590 1595  
1605 1610 1615  
1620 1625 1630  
1635 1640 1645  
1650 1655 1660  
1665 1670 1675  
1685 1690 1695  
1700 1705 1710  
1715 1720 1725  
1730 1735 1740  
1745 1750 1755  
1765 1770 1775  
1780 1785 1790  
1795 1800 1805  
1810 1815 1820  
1825 1830 1835  
1845 1850 1855  
1860 1865 1870

Asp Arg Lys Ile Gln Leu Glu Leu Ala Pro Pro Thr Pro Glu Ile Thr  
 1875 1880 1885  
 Glu Lys Glu His Glu Gly Gln Gln Val Lys Pro Glu Ala Lys Gly Val  
 1890 1895 1900  
 Arg Asn Gly Ile Arg Gln Tyr Pro Glu Asp Thr Ser Pro Gln Ile Arg  
 1905 1910 1915 1920  
 Asn Pro Ser Glu Ser Ile Ile Ala Asn His Thr Ile Thr Gly His Pro  
 1925 1930 1935  
 Gly Leu Tyr Ala Lys Glu Glu Thr Arg Ser Lys Gly Leu Lys Ile  
 1940 1945 1950

<210> 6904

<211> 450

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (399)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 6904

Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe  
 1 5 10 15  
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro  
 20 25 30  
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr  
 35 40 45  
 Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly  
 50 55 60  
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser  
 65 70 75 80  
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala  
 85 90 95  
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly  
 100 105 110  
 Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile  
 115 120 125  
 Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp  
 130 135 140  
 Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys  
 145 150 155 160  
 Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile  
 165 170 175  
 Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val  
 180 185 190  
 Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu  
 195 200 205  
 Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys  
 210 215 220  
 Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr  
 225 230 235 240  
 Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu  
 245 250 255  
 Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn  
 260 265 270  
 Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile  
 275 280 285  
 Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu

290	295	300
Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg		
305	310	315
Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe		320
	325	330
Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe		335
	340	345
Met Ala Glu Asn Thr Val Phe Leu Leu Leu Thr Ala Leu Ile His Asn		350
	355	360
Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu		365
	370	375
Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Xaa Val		380
385	390	395
Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr		400
	405	410
Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe Arg Leu		415
	420	425
Glu Ser Phe Leu Phe Arg Leu Asn Leu Arg Ile Thr Ser Ser Arg Ile		430
	435	440
Val Gly		445
450		

<210> 6905  
 <211> 478  
 <212> PRT  
 <213> B.fragilis

<400> 6905

Tyr Leu Ile Tyr Met Glu Gln Thr Lys Asn Glu Pro Lys Asn Glu Asn		
1	5	10
Lys Ala Ala Pro Asp Asn Gly Lys Pro Lys Asn Arg Arg Gln Ala Glu		15
	20	25
Ser His Gln Ala Cys Leu Asn Gly Gln Gly Ala Lys Glu Glu Gly Lys		30
	35	40
Ala Lys Glu Arg Lys Pro Leu Thr Glu Ala Gln Arg Leu Lys Arg Gln		45
	50	55
Lys Met Ile Val Leu Pro Ala Met Val Leu Val Phe Ile Gly Ala Met		60
65	70	75
Trp Leu Ile Phe Ala Pro Ser Ser Asp Lys Glu Gln Gln Pro Gly Thr		80
	85	90
Gly Gly Tyr Asn Ile Glu Met Pro Asp Ala Asp Lys Ala Asn Arg Gln		95
	100	105
Ile Ile Gly Asp Lys Ala Lys Ala Tyr Glu Gln Gly Ala Met Glu Glu		110
	115	120
Arg Gln Glu Asn Arg Ser Arg Ala Met Gln Glu Leu Gly Asp Met Phe		125
	130	135
Asp Arg Glu Val Ala Glu Thr Asp Gly Gly Arg Asp Phe Asp Leu Ala		140
145	150	155
Asn Pro Gly Asn Ala Glu Glu Ala Thr Ser Thr Ser Ser Ala Pro Lys		160
	165	170
Thr Ile Gln Ser Ser Ala Ala Ala Tyr Arg Asp Leu Asn Ala Thr Leu		175
	180	185
Gly Asn Phe Tyr Glu Gln Pro Lys Asn Asp Asn Thr Glu Met Asp Glu		190
	195	200
Leu Leu Glu Arg Ile Ala Ser Leu Glu Ser Glu Leu Ser Glu Lys		205
	210	215
Gly Lys Ala Ser Ala Met Asp Asp Gln Val Ala Leu Met Glu Lys Ser		220
225	230	235
Tyr Glu Leu Ala Ala Lys Tyr Met Gly Gly Gln Asn Asn Gly Lys Pro		240

1  
 2  
 3  
 4  
 5  
 6  
 7  
 8  
 9  
 10  
 11  
 12  
 13  
 14  
 15  
 16  
 17  
 18  
 19  
 20  
 21  
 22  
 23  
 24  
 25  
 26  
 27  
 28  
 29  
 30  
 31  
 32  
 33  
 34  
 35  
 36  
 37  
 38  
 39  
 40  
 41  
 42  
 43  
 44  
 45  
 46  
 47  
 48  
 49  
 50  
 51  
 52  
 53  
 54  
 55  
 56  
 57  
 58  
 59  
 60  
 61  
 62  
 63  
 64  
 65  
 66  
 67  
 68  
 69  
 70  
 71  
 72  
 73  
 74  
 75  
 76  
 77  
 78  
 79  
 80  
 81  
 82  
 83  
 84  
 85  
 86  
 87  
 88  
 89  
 90  
 91  
 92  
 93  
 94  
 95  
 96  
 97  
 98  
 99  
 100

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

<400> 6906

Pro	Met	Asn	Phe	Asp	Asn	Leu	His	Gln	Ile	Leu	Arg	Ser	Leu	Tyr	Glu
1				5					10					15	
Gln	Met	Met	Pro	Leu	Cys	Gly	Asp	Met	Ala	Gly	Val	Ala	Lys	Gly	Ile
			20					25					30		
Ala	Gly	Leu	Gly	Ala	Leu	Phe	Tyr	Val	Ala	Tyr	Arg	Val	Trp	Gln	Ser
		35					40					45			
Leu	Ala	Arg	Ala	Glu	Pro	Ile	Asp	Val	Phe	Pro	Met	Leu	Arg	Pro	Phe
	50					55					60				
Ala	Ile	Gly	Leu	Cys	Ile	Met	Phe	Phe	Pro	Thr	Val	Val	Leu	Gly	Thr
65					70					75					80
Ile	Asn	Ser	Ile	Met	Ser	Pro	Val	Val	Gln	Gly	Thr	Ala	Lys	Met	Leu
				85					90					95	
Glu	Thr	Glu	Thr	Leu	Asp	Met	Asn	Arg	Tyr	Arg	Glu	Gln	Lys	Asp	Lys
			100					105					110		
Leu	Glu	Tyr	Glu	Ala	Met	Met	Arg	Asn	Pro	Glu	Thr	Ala	Tyr	Leu	Val
		115					120					125			
Ser	Asn	Glu	Glu	Phe	Asp	Lys	Gln	Leu	Glu	Glu	Leu	Gly	Trp	Ser	Pro
	130					135					140				
Gly	Asp	Met	Val	Thr	Met	Ala	Gly	Met	Tyr	Ile	Glu	Arg	Gly	Met	Tyr
145					150					155					160
Asn	Met	Lys	Lys	Gly	Ile	Arg	Asp	Phe	Phe	Arg	Glu	Ile	Leu	Glu	Leu
				165					170					175	
Met	Phe	Gln	Ala	Ala	Ala	Leu	Val	Ile	Asp	Thr	Ile	Arg	Thr	Phe	Phe

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100

<400> 6907

Ile	Glu	Leu	Tyr	Leu	Leu	Thr	Glu	Leu	Gln	Glu	Trp	Glu	Ile	Met	Asn
1				5					10					15	
Tyr	Ile	Ala	Ile	Val	Cys	Trp	Met	Leu	Phe	Gly	Ser	Val	Leu	Arg	Leu
			20					25					30		
Cys	Ala	Gln	Thr	Cys	Gly	Ala	Thr	Tyr	Ile	Thr	Glu	Phe	Gln	Tyr	Asp
		35					40					45			
Leu	Lys	Lys	Arg	Thr	Asn	Trp	Cys	Asn	Leu	Leu	Arg	Leu	Asp	Ala	Tyr
	50					55					60				
Val	Pro	Ile	Gly	Thr	Lys	Gly	Ile	Leu	Glu	Phe	Ala	Ser	Ile	His	Val
65					70					75				80	
Tyr	Lys	Thr	Arg	Pro	Glu	Arg	Ile	Ile	Asn	Asp	Leu	Gln	Thr	Phe	Ser
				85					90					95	
Asn	Ile	Glu	Glu	Asp	Asn	Leu	Pro	Cys	Ala	Ile	Ala	Val	Leu	Gly	Tyr
			100					105					110		
Thr	Arg	Leu	Ile	Gly	Asn	Ile	Thr	Leu	Phe	Ala	Gly	Ile	Arg	Asn	Leu
		115					120					125			
Asn	Glu	Asp	Tyr	Phe	Thr	Thr	Pro	Cys	Met	Ser	Leu	Phe	Thr	Asn	Ser
	130					135					140				
Ser	Cys	Gly	Ile	Phe	Pro	Thr	Leu	Ser	Ala	Asn	Tyr	Pro	Ile	Ala	Asn
145					150					155				160	
Tyr	Pro	Leu	Ala	Ala	Leu	Cys	Leu	Asp	Tyr	Lys	Met	Thr	Leu	Gly	Arg
			165						170					175	
Phe	Gly	Ile	Glu	Ser	Ser	Leu	Tyr	Asn	Gly	Lys	Gly	Tyr	Asn	Gly	Trp
		180						185					190		
Ser	Lys	Gly	Lys	His	Pro	Phe	Thr	Phe	Asn	Pro	Arg	Lys	Asp	Gly	Val
	195						200					205			
Phe	Ser	Ile	Thr	Glu	Ile	Asn	Tyr	Gln	Thr	Glu	Tyr	Gly	Lys	Cys	Phe
	210					215					220				
Gly	Gly	Phe	Ser	Leu	His	Thr	Asn	Gly	Asp	Met	Pro	Asp	Val	Ala	Gly
225					230					235				240	
Glu	Trp	Lys	Thr	Arg	Glu	Arg	Glu	Lys	Lys	Val	Ser	Pro	Lys	Met	Met
				245					250					255	
Phe	Ala	Trp	Trp	Gly	Tyr	Ala	Glu	Arg	Lys	Leu	Trp	Ser	Arg	Val	Arg



260						265						270					
Gln	Glu	Val	Asn	Leu	Leu	Val	Gln	Tyr	Thr	Arg	Thr	Ser	Ser	Val	Phe		
275						280						285					
Ser	Glu	Cys	Arg	Asn	Tyr	Met	Gly	Ala	Gly	Val	Thr	Trp	Ile	Tyr	Val		
290						295						300					
Pro	Gly	Gly	Gln	Lys	Arg	His	Glu	Ala	Gly	Leu	Phe	Leu	Ser	Ala	Ala		
305						310						315					
Gln	Phe	Lys	Ser	Cys	Asn	Glu	Val	Ala	Gly	Glu	Val	Thr	Tyr	Arg	Tyr		
320						325						330					
Ser	Phe	Asn	Arg	Asp	Thr	Tyr	Ile	Gln	Pro	Ala	Ile	His	Leu	Ile	Lys		
335						340						345					
Asn	Gly	Gly	Gly	Leu	His	Glu	Val	Phe	Leu	Ile	Arg	Met	Gly	Tyr	Ile		
350						355						360					
Leu	Asn	Gly	Gly	Arg	Val	Arg											
365						370						375					

&lt;210&gt; 6908

&lt;211&gt; 427

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6908

Arg	Arg	Ile	Leu	His	Arg	Leu	Ile	Leu	Asn	Leu	Lys	Lys	Leu	Arg	Thr		
1			5						10				15				
Met	Lys	Ser	Thr	Phe	Ser	Val	Ile	Tyr	Leu	Lys	Arg	Gln	Val	Val			
20						25						30					
Lys	Lys	Asp	Gly	Thr	Val	Pro	Val	Met	Gly	Arg	Ile	Thr	Val	Asp	Gly		
35						40						45					
Ser	Gln	Thr	Gln	Phe	Ser	Cys	Lys	Leu	Thr	Val	Asp	Pro	Lys	Leu	Trp		
50						55						60					
Asp	Thr	Lys	Gly	Gly	Arg	Val	Thr	Gly	Arg	Ser	Thr	Ala	Ala	Leu	Glu		
65						70						75					
Thr	Asn	Arg	Met	Leu	Asp	Lys	Met	Arg	Val	Arg	Ile	Asn	Lys	His	Tyr		
85						90						95					
Gln	Glu	Ile	Met	Glu	Arg	Asp	Asn	Phe	Val	Thr	Ala	Glu	Lys	Val	Lys		
100						105						110					
Asn	Ala	Phe	Leu	Gly	Leu	Glu	His	Arg	Tyr	His	Thr	Leu	Leu	Gln	Val		
115						120						125					
Phe	Arg	Gln	His	Asn	Glu	Asp	Tyr	Ala	Lys	Gln	Val	Glu	Ala	Gly	Met		
130						135						140					
Lys	Ala	Lys	Gly	Thr	Phe	Asp	Lys	Tyr	Lys	Ile	Val	Tyr	Lys	His	Leu		
145						150						155					
Gln	Glu	Phe	Leu	Thr	Ile	Arg	Tyr	His	Val	Lys	Asp	Ile	Ala	Leu	Lys		
165						170						175					
Glu	Leu	Thr	Pro	Ala	Phe	Ile	Ser	Asp	Phe	Glu	Met	Phe	Leu	Arg	Thr		
180						185						190					
Asp	Lys	His	Cys	Cys	Thr	Asn	Thr	Val	Trp	Leu	Tyr	Val	Cys	Pro	Leu		
195						200						205					
Arg	Thr	Met	Val	Phe	Ile	Ala	Ile	Asn	Asn	Glu	Trp	Leu	Thr	Arg	Asp		
210						215						220					
Pro	Phe	Arg	Glu	Tyr	Glu	Ile	Lys	Lys	Glu	Glu	Thr	Thr	Arg	Ser	Phe		
225						230						235					
Leu	Thr	Lys	Asp	Glu	Ile	Arg	Leu	Leu	Met	Glu	Gly	Lys	Leu	Lys	Asn		
245						250						255					
Ala	Lys	Gln	Glu	Leu	Tyr	Arg	Asp	Leu	Tyr	Leu	Phe	Cys	Ala	Phe	Thr		
260						265						270					
Gly	Leu	Ser	Phe	Ala	Asp	Met	Arg	Asn	Leu	Thr	Glu	Glu	Asn	Ile	Arg		
275						280						285					
Thr	Tyr	Phe	Asp	Glu	His	Glu	Trp	Ile	Asn	Ile	Asn	Arg	Gln	Lys	Thr		

290 295 300  
 Gly Val Val Ser Asn Ile Arg Met Leu Asp Ile Ala Lys Arg Ile Ile  
 305 310 315 320  
 Asp Lys Tyr Arg Gly Leu Cys Glu Asn Gly Arg Ile Phe Pro Val Pro  
 325 330 335  
 His Tyr Asn Thr Cys Leu Ala Gly Ile Arg Ala Val Ala Lys Arg Cys  
 340 345 350  
 Gly Ile Thr Lys His Ile Thr Trp His Gln Ser Arg His Thr Ala Ala  
 355 360 365  
 Thr Thr Val Phe Leu Ser Asn Gly Val Pro Ile Glu Thr Val Ser Ser  
 370 375 380  
 Met Leu Gly His Lys Ser Ile Lys Thr Thr Gln Ile Tyr Ala Lys Ile  
 385 390 395 400  
 Thr Lys Glu Lys Leu Asn Gln Asp Met Glu His Leu Ala Ala Arg Leu  
 405 410 415  
 Asn Gln Ile Glu Glu Phe Ala Gly Cys Thr Ile  
 420 425

<210> 6909  
 <211> 61  
 <212> PRT  
 <213> B.fragilis

<400> 6909  
 Thr Ser Gly Tyr Arg Ser Glu Ile Gly Ile Val Thr Arg Pro Glu Asn  
 1 5 10 15  
 Asp Ser Phe Gly Arg Ser Ala Asp Asn Ser Gly Thr His Val Ala Asp  
 20 25 30  
 Ile Val Lys Leu Asp Asp Ala Ser Val Thr Val Ser Pro Thr Val Tyr  
 35 40 45  
 Phe Arg Lys Phe Leu Tyr Trp Ile Gly Leu Thr Gly Lys  
 50 55 60

<210> 6910  
 <211> 84  
 <212> PRT  
 <213> B.fragilis

<400> 6910  
 Gly Cys Ser Leu Lys Tyr Glu Asn Thr Ala Asn Thr Lys Met Ala Lys  
 1 5 10 15  
 Gln Pro Ile Ala Phe Lys Asn Phe Phe Ile Tyr Ser Val Val Leu Val  
 20 25 30  
 Thr His Asn Lys Tyr Arg Arg Phe Phe Leu Ser Ile Lys Lys Thr Phe  
 35 40 45  
 Leu Thr Lys Thr Tyr Lys Leu Lys Ile Asn Lys Met Pro Pro Tyr Lys  
 50 55 60  
 Asn Leu His Gln Lys Ser Ser Leu Cys Glu Lys Ser Ser Leu Ser Leu  
 65 70 75 80  
 Gly Ser Thr Asn

<210> 6911  
 <211> 114  
 <212> PRT  
 <213> B.fragilis

<400> 6911  
 Asn Pro Pro Leu His His Phe Ile Asp Gly Ile Leu Gly Cys Leu Pro

1 5 10 15  
 Cys Leu Val Ser Gly Leu Asp Glu Glu Glu Ala Tyr His Leu Val Leu  
 20 25 30  
 Leu Ala Gly Arg Asp Asn Gly Glu Val Phe Val Leu Ala Glu Asn Ala  
 35 40 45  
 Leu Ser Gly Ala Gln Arg Phe Gln Leu His Thr Ala Met Gly Ala Gly  
 50 55 60  
 Thr Ser Ala Asn Gly Val Arg Lys Val Val Val Ala Leu Pro Arg Met  
 65 70 75 80  
 Ser Ala Leu Gly Thr Asp Ile Arg Ala Val Arg Pro Leu Asp Cys Val  
 85 90 95  
 Met Leu Glu Ala Met Thr Glu Ser Val Cys Leu Leu Arg Gly Gly Gln  
 100 105 110  
 Ser Arg

<210> 6912  
 <211> 66  
 <212> PRT  
 <213> B.fragilis

<400> 6912  
 Leu Arg Asp Leu Thr Gly Lys Gln Gly Gln Ala Ser Cys Phe Arg Glu  
 1 5 10 15  
 Lys Ser Pro Ala Leu Arg Val Val Phe Phe Pro Lys Asn Leu Ala Phe  
 20 25 30  
 Pro Asn Pro Tyr Leu Phe Lys His Pro Lys Arg Lys Arg Pro Met Arg  
 35 40 45  
 Gln Lys Asp Ala Leu Lys Lys Met Ser Asp Lys Arg Glu Ala Asp Lys  
 50 55 60  
 Ile Val  
 65

<210> 6913  
 <211> 532  
 <212> PRT  
 <213> B.fragilis

<400> 6913  
 Asn Ile Phe Gln Met Ala Lys Lys Lys Ser Glu Lys Asp Val Leu Ile  
 1 5 10 15  
 Val Arg Asp Glu Lys Thr Gly Glu Ile Ser Val Val Ala Gly Leu Asp  
 20 25 30  
 Ala Asp Gly Ser Pro Lys Arg Thr Pro Ala Lys Ala Glu Asn Ala Gln  
 35 40 45  
 Ser Phe Leu Gln Phe Asp Arg His Gly Asp Val Leu Asp Asn Phe Phe  
 50 55 60  
 Lys Asn Phe Phe Arg Gln Cys Lys Glu Pro Ser Arg Phe Gly Phe Tyr  
 65 70 75 80  
 Arg Val Ala Ala Asp Gln Ala Asp Lys Leu Met Glu Val Met Lys Asp  
 85 90 95  
 Leu Leu Lys Asp Pro Glu Ala Asn Lys Glu Leu Leu Ala Pro His Lys  
 100 105 110  
 Val Asp Thr Ser Gly Tyr Glu Lys Gln Val Lys Glu Glu Gln Thr Ala  
 115 120 125  
 Gly Lys Thr Glu Gln Thr Glu Gln Lys Gln Glu Glu Gln Pro Lys Glu  
 130 135 140  
 Asn Gln Lys Gln Glu Glu Met Glu Lys Lys Gln Glu Ser Pro Gln Gln  
 145 150 155 160

Thr Gln Gly Arg Gln Gly Tyr Gln Pro Ile Asp Glu Ser Lys Ile Asn  
 165 170 175  
 Trp Gln Glu Leu Glu Glu Lys Trp Gly Val Lys His Asp Asp Leu Glu  
 180 185 190  
 Lys Ser Gly Asp Leu Gln Lys Met Leu Asn Tyr Gly Lys Ser Asp Leu  
 195 200 205  
 Val Lys Val Ser Pro Lys Phe Gly Gly Glu Ala Phe Glu Leu Asp Ala  
 210 215 220  
 Arg Leu Ser Phe Lys Lys Asp Gly Glu Gly Asn Val Ser Leu Val Pro  
 225 230 235 240  
 His Phe Ile Arg Lys Glu Gln Lys Leu Asp Glu Tyr Lys Glu His Lys  
 245 250 255  
 Phe Ser Asp Glu Asp Arg Lys Asn Leu Arg Glu Thr Gly Asn Leu Gly  
 260 265 270  
 Arg Val Val Asp Ile Val Asp Arg Glu Thr Gly Glu Ile Ile Pro Ser  
 275 280 285  
 Phe Ile Ser Ile Asp Arg Lys Thr Asn Glu Ile Thr Asp Ile Pro Ala  
 290 295 300  
 Asn Lys Val Arg Ile Pro Asp Arg Ile Gly Lys Thr Glu Ile Thr Lys  
 305 310 315 320  
 Gln Glu Gln Asp Met Leu Arg Ala Gly Leu Pro Val Arg Asp Lys Leu  
 325 330 335  
 Ile Glu Arg Asn Asp Gly Arg Lys Phe Val Thr Thr Leu Gln Val Asn  
 340 345 350  
 Val Glu Gln Arg Gly Val Glu Phe Val Pro Gly Thr Gly Arg Ser Pro  
 355 360 365  
 Arg Thr Ala Gln Thr Gln Glu Ala Lys Asn Asn Pro Thr Gln Gly Gln  
 370 375 380  
 Ala Gln Gly Met Glu Asn Ser Ala Ala Pro Gln Lys Glu Gln Arg Arg  
 385 390 395 400  
 Asn Thr Trp Thr Asn Ala Asp Gly Ser Ile Arg Pro Ile Ser Lys Trp  
 405 410 415  
 Ser Gly Val Asn Phe Thr Asp Gln Gln Lys Ala Asp Tyr Ala Ala Gly  
 420 425 430  
 Lys Ala Ile Lys Leu Glu Asn Val Thr Asp Lys Gln Gly Phe His Ala  
 435 440 445  
 Thr Met Tyr Ile Lys Phe Asn Pro Glu Lys Gly Arg Pro Tyr Arg Tyr  
 450 455 460  
 Asp Thr Asn Pro Asp Asn Ala Gln Lys Val Ala Pro Ser Asn Glu Ser  
 465 470 475 480  
 Arg Thr Gln Val Ala Val Asn Ser Glu Gly Lys Thr Asn Glu Ala Thr  
 485 490 495  
 Lys Asn Leu Lys Glu Pro Leu Gln Lys Gly Gln Thr Ala Pro Lys Asp  
 500 505 510  
 Asp Lys Gln Gln Lys Leu Gln Glu Lys Pro Gln Lys Lys Ile Ile Lys  
 515 520 525  
 Gly Met Lys Met  
 530

&lt;210&gt; 6914

&lt;211&gt; 785

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6914

Thr Phe Ile His Val Pro Lys Ile Asn Val Ile Lys Ile Met Glu Arg  
 1 5 10 15  
 Ser Gly Asn Phe Tyr Lys Ala Ile Gln Leu Gly Tyr Ile Leu Ile Ser  
 20 25 30

Ile	Leu	Ile	Gly	Cys	Met	Ala	Tyr	Asn	Ser	Leu	Tyr	Glu	Trp	Gln	Glu
		35					40					45			
Ile	Glu	Ala	Leu	Glu	Leu	Gly	Asn	Lys	Lys	Ile	Asp	Glu	Leu	Arg	Lys
		50				55					60				
Glu	Ile	Asn	Asn	Ile	Asn	Ile	Gln	Met	Ile	Lys	Phe	Ser	Leu	Leu	Gly
65					70					75					80
Glu	Thr	Ile	Leu	Glu	Trp	Asn	Asp	Lys	Asp	Ile	Glu	His	Tyr	His	Ala
				85					90					95	
Arg	Arg	Met	Ala	Met	Asp	Ser	Met	Leu	Cys	Arg	Phe	Lys	Ala	Thr	Tyr
			100					105					110		
Pro	Ala	Glu	Arg	Ile	Asp	Ser	Val	Arg	Ser	Leu	Leu	Glu	Asp	Lys	Glu
		115						120					125		
Arg	Gln	Met	Phe	Gln	Ile	Val	Arg	Leu	Met	Asp	Glu	Gln	Gln	Ser	Ile
	130					135					140				
Asn	Lys	Lys	Ile	Ala	Asn	Gln	Ile	Pro	Val	Ile	Val	Gln	Lys	Ser	Val
145					150					155					160
Gln	Glu	Gln	Ser	Lys	Lys	Pro	Lys	Arg	Lys	Gly	Phe	Leu	Gly	Ile	Phe
				165					170					175	
Gly	Lys	Lys	Glu	Gly	Thr	Lys	Pro	Thr	Thr	Thr	Thr	Thr	Thr	Leu	Arg
			180					185						190	
Ser	Ser	Asn	Arg	Asn	Met	Val	Asn	Glu	Gln	Lys	Ala	Gln	Ser	Arg	Arg
		195					200					205			
Leu	Ser	Glu	Gln	Ala	Asp	Ser	Leu	Ala	Ala	Arg	Asn	Ala	Glu	Leu	Asn
	210					215					220				
Arg	Gln	Leu	Gln	Gly	Leu	Ile	Cys	Gln	Ile	Glu	Lys	Lys	Val	Gln	Ser
225					230					235					240
Asp	Leu	Gln	Asn	Arg	Glu	Ser	Glu	Ile	Thr	Ala	Met	Arg	Lys	Lys	Ser
				245					250					255	
Phe	Met	Gln	Ile	Gly	Gly	Leu	Met	Gly	Phe	Val	Leu	Leu	Leu	Leu	Val
			260					265					270		
Ile	Ser	Tyr	Ile	Ile	Ile	His	Arg	Asp	Ala	Lys	Asn	Ile	Lys	Arg	Tyr
		275					280					285			
Lys	Arg	Lys	Thr	Thr	Asp	Leu	Ile	Glu	Gln	Leu	Glu	Gln	Ser	Val	Gln
	290					295					300				
Gln	Asn	Glu	Val	Leu	Ile	Thr	Ser	Arg	Lys	Lys	Ala	Val	His	Thr	Ile
305					310					315					320
Thr	His	Glu	Leu	Arg	Thr	Pro	Leu	Thr	Ala	Ile	Thr	Gly	Tyr	Thr	Glu
				325					330					335	
Leu	Leu	Arg	Lys	Glu	Cys	Asn	Ser	Gly	Asn	Asn	Gly	Gln	Tyr	Ile	Arg
			340					345					350		
Asn	Ile	Leu	Gln	Ser	Ser	Asp	Arg	Met	Arg	Asp	Met	Leu	Asn	Thr	Leu
	355						360					365			
Leu	Asp	Phe	Phe	Arg	Leu	Asp	Asn	Gly	Lys	Glu	Gln	Pro	Arg	Leu	Ser
	370					375					380				
Pro	Cys	Arg	Ile	Ser	Ala										

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100

<400> 6915															
Lys	Gln	Ile	His	Gln	Leu	Lys	Lys	Lys	Met	Arg	Met	Ser	Ile	Ser	Arg
1				5					10					15	
Thr	Lys	Met	Leu	Gln	Val	Ser	Lys	Cys	Leu	Ile	Gly	Leu	Ala	Val	Met
			20					25					30		
Met	Leu	Gln	Ser	Cys	Asp	Val	Ala	Asp	Asn	Arg	Arg	Asp	Leu	Leu	Cys
		35					40					45			
Gly	Asn	Trp	Glu	Ser	Val	Glu	Gly	Lys	Pro	Asp	Val	Leu	Ile	Tyr	Lys
	50					55					60				
Glu	Gly	Glu	Ala	Tyr	Lys	Val	Thr	Val	Phe	Lys	Arg	Ser	Gly	Leu	Arg
65					70					75					80
Arg	Lys	Leu	Lys	Pro	Glu	Thr	Tyr	Leu	Leu	Gln	Glu	Glu	Asn	Gly	Asn
				85					90					95	
Leu	Phe	Met	Asn	Thr	Gly	Phe	Arg	Ile	Asp	Val	Ser	Tyr	Asn	Glu	Ala
			100					105					110		
Thr	Asp	Ile	Leu	Thr	Phe	Ser	Pro	Asn	Gly	Asp	Tyr	Val	Arg	Val	Asn

115 120 125  
 Pro Lys Pro Asp His Pro Ile Gly Glu Gln  
 130 135

<210> 6916  
 <211> 133  
 <212> PRT  
 <213> B.fragilis

<400> 6916  
 Phe Glu Thr Gln Leu Pro Gln Leu Leu Asn Pro His Lys Lys Ile Lys  
 1 5 10 15  
 Ile Lys Asn Arg Thr Asp Met Gly Thr Thr Met Ala Thr Lys Phe Val  
 20 25 30  
 Ala Trp Glu Val Pro Thr Leu Glu Ala Leu Lys Gly Ser Lys Val Tyr  
 35 40 45  
 Ile Leu Arg Glu Lys Leu Asn Asn Gly Gly Gln Met Asn Arg Glu Glu  
 50 55 60  
 Lys Asp Trp Leu Thr Arg Asn Val Asn Ser Asn Thr Tyr Phe Lys Ser  
 65 70 75 80  
 Ala Val Pro Leu Gln Gly Trp Arg Phe Asp Phe Ser Asp Val Leu Arg  
 85 90 95  
 Thr Phe Ile Val Cys Gln Tyr Gly His Trp Thr Glu Tyr Lys Ala Thr  
 100 105 110  
 Asp Lys Thr Gly Leu Arg Arg Tyr Leu Tyr Gly Arg Ile Asp Asn Ile  
 115 120 125  
 Val Glu Leu Glu Lys  
 130

<210> 6917  
 <211> 174  
 <212> PRT  
 <213> B.fragilis

<400> 6917  
 Leu Lys Asn Gln Met Thr Met Asn Ile Leu Asn Asn Lys Asn Lys Arg  
 1 5 10 15  
 Ile Ser Ile Phe Lys Ala Leu Ala Leu Cys Leu Phe Ala Ala Val Ser  
 20 25 30  
 Leu Thr Leu Val Ser Cys Asp Asp Asp Met Asp Ile Gln Gln Ser Tyr  
 35 40 45  
 Pro Phe Thr Val Glu Ile Met Pro Val Pro Asn Lys Val Thr Lys Gly  
 50 55 60  
 Gln Thr Val Glu Ile Arg Cys Glu Leu Lys Lys Thr Gly Asp Tyr Ala  
 65 70 75 80  
 Asn Thr Leu Tyr Thr Ile Arg Tyr Phe Gln Phe Glu Gly Glu Gly Thr  
 85 90 95  
 Leu Lys Met Asp Asn Gly Ile Thr Phe Leu Pro Asn Asp Arg Tyr Leu  
 100 105 110  
 Leu Glu Asn Glu Lys Phe Arg Leu Tyr Tyr Thr Ala Ala Gly Glu Glu  
 115 120 125  
 Ala His Asn Phe Ile Val Val Glu Asp Asn Phe Asp Asn Ser Tyr  
 130 135 140  
 Glu Leu Glu Phe Asp Phe Asn Asn Arg Asn Val Lys Asp Asp Gly Ala  
 145 150 155 160  
 Ile Ser Val Val Pro Ile Gly Asn Phe Lys Pro Leu Thr Arg  
 165 170

<210> 6918

<211> 150  
 <212> PRT  
 <213> B.fragilis

<400> 6918

Gly	Leu	Lys	His	Leu	Ser	Ile	Tyr	Gly	Ser	Gly	Asn	Thr	Thr	Phe	Thr
1				5					10					15	
Asn	Gly	Ile	Lys	Ser	His	Asp	Glu	Leu	Gln	Met	Ser	Ile	Tyr	Gly	Ser
			20					25					30		
Gly	Asn	Ile	Ser	Gly	Asn	Ser	Phe	Ser	Cys	Thr	Lys	Leu	Ala	Ala	Arg
			35				40					45			
Ile	Tyr	Gly	Ser	Gly	Asn	Val	Asn	Leu	Lys	Arg	Ile	Ser	Thr	Ser	Asp
	50					55					60				
Thr	Gln	Val	Asn	Ile	Ser	Gly	Ser	Gly	Asn	Val	Leu	Leu	Asp	Gly	Lys
65					70				75						80
Ser	Thr	Glu	Ala	Glu	Tyr	His	Ile	Ala	Gly	Ser	Gly	Asp	Ile	Asn	Ala
				85					90					95	
Thr	Glu	Leu	Lys	Val	Glu	Asn	Val	Asn	Ala	Arg	Ile	Ser	Gly	Ser	Gly
			100					105					110		
Ser	Ile	Arg	Cys	Tyr	Ala	Thr	Glu	Asn	Leu	Thr	Gly	Gly	Val	Ser	Gly
		115					120					125			
Ser	Gly	Asn	Val	Ala	Tyr	Lys	Gly	Asn	Pro	Gln	Ile	Asn	Phe	Ser	Lys
	130					135					140				
Arg	Gly	Leu	Gln	Lys	Leu										
145					150										

<210> 6919  
 <211> 433  
 <212> PRT  
 <213> B.fragilis

<400> 6919

Phe	Leu	Met	Gln	Gln	Asn	Asn	Ser	Glu	Lys	Trp	Asn	Phe	Leu	Ser	Asn
1				5					10					15	
Lys	Lys	Leu	Phe	Trp	Gly	Thr	Ile	Ile	Val	Ile	Leu	Phe	Leu	Phe	Leu
			20					25					30		
Leu	Ser	Ala	Trp	Leu	Phe	Phe	Trp	Asn	Arg	Glu	Arg	His	Phe	Phe	Asn
		35					40					45			
Asp	Asn	Tyr	Val	Leu	Asp	Asn	Ala	Leu	Trp	Gly	Thr	Leu	Gly	Asp	Phe
	50					55					60				
Val	Gly	Gly	Phe	Ile	Gly	Ser	Ile	Leu	Ala	Phe	Ile	Gly	Val	Ile	Val
65					70				75						80
Thr	Cys	Gln	Ile	Phe	Ile	Glu	Gln	Arg	Gln	Gln	Thr	Ile	Asp	Leu	Asn
				85				90						95	
Glu	Glu	Gln	Lys	Arg	Ile	Thr	Ser	Asn	Ser	Gln	Lys	Ser	Gln	Ile	Asn
			100					105					110		
Gln	Ser	Glu	Ile	Gln	Arg	Phe	Asn	Ser	Leu	Phe	Phe	Glu	Leu	Ile	Asp
		115					120					125			
Leu	His	Arg	Thr	Gln	Val	Asp	Tyr	Leu	Met	Lys	Met	Pro	Leu	Val	Gly
	130					135					140				
Phe	Glu	Ala	Glu	Asn	Ser	Lys	Glu	Thr	Asn	Phe	Phe	Asp	Arg	Phe	Met
145					150					155					160
Glu	Glu	Leu	His	Ser	Asn	Ser	Asn	Val	Asn	Ser	Ser	Tyr	Ala	Arg	Ala
				165				170						175	
Phe	Ile	Val	Ala	Lys	Arg	Lys	Tyr	Leu	Gln	Leu	Tyr	Leu	Ser	Asn	Ser
		180						185					190		
Thr	Ile	Leu	Ala	Pro	Tyr	Phe	Arg	Val	Leu	Tyr	Arg	Leu	Phe	Glu	Leu
	195						200					205			
Ile	Asp	Lys	Ala	Asn	Ile	Glu	Glu	Lys	Glu	Lys	Val	Arg	Tyr	Ala	Lys



210	Ile Ala Arg Ala Gln	215	Leu Ser Glu Ser Glu	220	Leu Phe Ile Leu Arg Tyr
225	Asn Ser Ala Asn Leu	230	Tyr Gly Asp Asn Phe	235	Ile Glu Tyr Ile Asn Lys
	245		250		255
Phe Arg Leu Leu Lys	260	His Leu Pro Leu	265	Leu Ser Leu Leu Glu	270
Asn Ile Arg Asn Val	275	Ile Ala Glu Gly Asp	280	Ser Leu Tyr Gln Tyr	285
Ile Asn Met Leu Phe	290	Phe Ser Val Trp Lys	295	Arg Ile Tyr Asn Ile	300
Val Gly His Glu Asp	305	Arg Thr Asn Asp Phe	310	Val Gln Leu Tyr Asp	315
Arg Lys Arg Tyr Lys	325	Phe Glu Leu Lys Met	330	Pro Lys Lys His Arg	335
Ala Leu Tyr Leu Thr	340	Ile Asp Thr Ser Arg	345	Pro Asn Arg Asp Pro	350
Leu Lys Cys Phe Arg	355	Asn Phe Asn Glu Ser	360	Asp Phe Gly Lys Leu	365
Thr Asn Phe Leu Leu	370	Glu Ile Tyr Lys Tyr	375	Ser Asn Phe Ser Arg	380
Asn Lys Asp Glu Asn	385	Ile Glu Tyr His Lys	390	Lys Val Phe His Asp	395
Ser Val Thr Lys Ile	405	Val Cys Trp Ile Leu	410	Asn Thr Glu Asn Lys	415
Leu Arg Val Ser His	420	Pro Ser Arg Asp Lys	425	Phe Tyr Gly Ile Ser	430
Asp					

<210> 6920  
 <211> 386  
 <212> PRT  
 <213> B.fragilis

<400> 6920	Pro Asn Met Gln Glu Thr Asn Ser Lys Ile Asn Lys Tyr Asp Tyr Leu
1	5 10 15
Ile Val Gly Ala Gly Leu Phe Gly Ser Val Phe Ala His Glu Ala His	20 25 30
Lys Arg Asn Lys Arg Cys Leu Val Leu Glu Lys Arg Pro Trp Thr Gly	35 40 45
Gly Asn Ile Tyr Cys Glu Asn Ile Asn Glu Ile His Val His Lys Tyr	50 55 60
Gly Ala His Ile Phe His Thr Asp Lys Lys Lys Ile Trp Asp Tyr Val	65 70 75 80
Asn Ser Leu Val Glu Phe Asn Gln Phe Ile Asn Ser Pro Leu Ala Ser	85 90 95
Ser Gly Gly Lys Leu Tyr Asn Leu Pro Phe Asn Met Asn Thr Phe Tyr	100 105 110
Gln Leu Trp Gly Val Gln Thr Pro Met Glu Ala Glu Ile Lys Leu Glu	115 120 125
Glu Gln Arg His Pro Tyr Arg Ile Ile Thr Asn Pro Gln Asn Leu Glu	130 135 140
Glu Gln Ala Leu Lys Ile Cys Gly Ser Asp Ile Tyr Tyr Arg Leu Ile	145 150 155 160
Lys Gly Tyr Thr Glu Lys Gln Trp Gly Arg Ala Ala Thr Lys Leu Pro	165 170 175
Ala Phe Ile Val Lys Arg Ile Pro Phe Arg Phe Thr Phe Asp Asn Asn	

180 185 190  
 Tyr Phe Asn Asp Pro Tyr Gln Gly Ile Pro Ile Gly Gly Tyr Asn Arg  
 195 200 205  
 Leu Ile Asn Ala Leu Leu Glu Gly Ile Glu Val Lys Thr Asn Ile Asn  
 210 215 220  
 Tyr Leu Glu Asn Arg Asn Lys Trp Asp Ser Ile Ala Glu Lys Val Leu  
 225 230 235 240  
 Phe Thr Gly Cys Ile Asp Glu Tyr Phe Asn Phe Cys Tyr Gly Lys Leu  
 245 250 255  
 Glu Tyr Arg Ser Leu Arg Phe Glu Thr His Cys Leu Asn Asp Ile Ser  
 260 265 270  
 Asn Tyr Gln Gly Asn Ala Val Ile Asn Tyr Cys Asp Ser Asn Ile Pro  
 275 280 285  
 Tyr Thr Arg Val Ile Glu His Lys His Phe Glu Phe Gly Thr Gln Asn  
 290 295 300  
 Ser Thr Ile Ile Thr Tyr Glu Phe Pro Glu Glu Leu Ser Ile Gly Lys  
 305 310 315 320  
 Glu Pro Tyr Tyr Pro Ile Asn Asp Glu Lys Asn Thr Thr Ile Phe Arg  
 325 330 335  
 Lys Tyr Gln Thr Leu Ala Glu Thr Asn Lys Lys Val Leu Leu Gly Gly  
 340 345 350  
 Arg Leu Ala Gln Tyr Thr Tyr Ala Asp Met Asp Asp Thr Val Glu Ala  
 355 360 365  
 Ala Leu Ser Leu Trp Asn Lys Glu Leu Gln Asn Ser Ser Gln Thr Lys  
 370 375 380  
 Leu Ile  
 385

<210> 6921  
 <211> 246  
 <212> PRT  
 <213> B.fragilis

<400> 6921  
 Lys Arg Thr His Met Asn Gly Thr Ile Ser Met Thr Asp Ile Leu Leu  
 1 5 10 15  
 Ala Val Ser Val Gly Cys Asn Leu Trp Phe Leu Phe Leu Leu Tyr  
 20 25 30  
 Asp Arg Ile Met Glu Thr Arg Phe Val Arg Phe Leu Lys Gly Ile Ala  
 35 40 45  
 Gly Leu Trp Arg Ser Leu Asp Gly Met Ala Ala Lys Gln Glu Thr Val  
 50 55 60  
 Arg Glu Ala Ser Pro Ala Glu Thr Ser Asp Ile Ile Gly Lys Ser Arg  
 65 70 75 80  
 Phe Arg Met Ala Ser Thr Arg Thr Thr Ala Ala Ile Pro Thr Gln Glu  
 85 90 95  
 Ala Ala Thr Ser Glu Lys Gly Ile Glu Leu Ser Glu Glu Glu Ala Thr  
 100 105 110  
 Phe Asp Asp Gly Asn Thr Glu Thr Val Ser His Pro Ala Gln Val Pro  
 115 120 125  
 Glu Glu Lys Leu Asp Glu Thr Phe Thr Ser Ile Pro Pro Ser Glu Leu  
 130 135 140  
 Glu Phe Gly Glu Asp Glu Pro Glu Asp Gly Thr Pro Asp Thr Pro Arg  
 145 150 155 160  
 Ala Thr Gly Ser Ser Phe Asp Glu Ile Asp Asp Ala Val Arg Ala Ala  
 165 170 175  
 Lys Asn Pro Glu Ala Thr Thr Ala Glu Arg Glu Arg Ala Ala Lys Val  
 180 185 190  
 Phe Ser Asp Met Glu Gly Thr Glu Leu Tyr Glu Lys Leu Met Ser Gly

195	200	205
Ser Thr Glu Leu Ser Ile Arg	Ile Lys Gly Leu Ile Glu Val Arg Leu	
210	215	220
Lys Lys Pro Lys Lys Glu Phe Thr Val Pro Asp Asn Ile Asp Glu Phe		
225	230	235
Asn Ile Arg Asp Tyr Val		
245		

<210> 6922  
 <211> 83  
 <212> PRT  
 <213> B.fragilis

<400> 6922

Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe	
1	15
Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met	
20	30
Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu	
35	45
Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu	
50	60
Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser	
65	80
Ser Ala Arg	

<210> 6923  
 <211> 452  
 <212> PRT  
 <213> B.fragilis

<400> 6923

Ser Gly Trp Gln Lys Arg Lys Gly Glu Asn Thr Lys Met Asp Lys Thr	
1	15
Thr Ile Ile Val Val Glu Asp Asn Ile Val Tyr Cys Glu Phe Val Cys	
20	30
Asn Met Leu Ala Arg Glu Gly Tyr Arg Thr Val Lys Ala Tyr His Leu	
35	45
Ser Thr Ala Lys Lys His Leu Gln Gln Ala Thr Asp Asn Asp Ile Val	
50	60
Val Ala Asp Leu Arg Leu Pro Asp Gly Asn Gly Ile Asp Leu Leu Arg	
65	80
Trp Met Arg Lys Glu Gly Lys Met Gln Pro Phe Ile Ile Met Thr Asp	
85	95
Tyr Ala Glu Val Asn Thr Ala Val Glu Ser Met Lys Leu Gly Ser Ile	
100	110
Asp Tyr Ile Pro Lys Gln Leu Val Glu Asp Lys Leu Val Pro Leu Ile	
115	125
Arg Ser Ile Leu Lys Glu Arg Gln Ala Gly Gln Arg Arg Met Pro Val	
130	140
Phe Ala Arg Asp Gly Ser Ala Phe Gln Lys Ile Met His Arg Ile Arg	
145	160
Leu Val Ala Ala Thr Asp Met Ser Val Met Ile Phe Gly Glu Asn Gly	
165	175
Thr Gly Lys Glu His Ile Ala His His Leu His Asp Lys Ser Lys Arg	
180	190
Ala Val Lys Pro Phe Val Ala Val Asp Cys Gly Ser Leu Thr Lys Glu	
195	205

Leu Ala Pro Ser Ala Phe Phe Gly His Val Lys Gly Ala Phe Thr Gly  
 210 215 220  
 Ala Asp Cys Ala Lys Lys Gly Tyr Phe His Glu Ala Glu Gly Gly Thr  
 225 230 235 240  
 Leu Phe Leu Asp Glu Val Gly Asn Leu Ala Leu Glu Thr Gln Gln Met  
 245 250 255  
 Leu Leu Arg Ala Ile Gln Glu Arg Arg Tyr Arg Pro Val Gly Asp Lys  
 260 265 270  
 Ala Asp Arg Ser Phe Asn Val Arg Ile Ile Ala Ala Thr Asn Glu Asp  
 275 280 285  
 Leu Glu Ala Ala Val Ser Glu Lys Arg Phe Arg Gln Asp Leu Leu Tyr  
 290 295 300  
 Arg Leu His Asp Phe Gly Ile Thr Val Pro Pro Leu Arg Asp Cys Gln  
 305 310 315 320  
 Glu Asp Ile Met Pro Leu Ala Glu Phe Phe Arg Glu Ala Ala Asn Lys  
 325 330 335  
 Glu Leu Glu Cys Asp Val Ile Gly Phe Asp Gly Glu Ala Arg Lys Thr  
 340 345 350  
 Leu Leu Thr His Val Trp Pro Gly Asn Val Arg Glu Leu Arg Gln Lys  
 355 360 365  
 Ile Met Gly Ala Val Leu Gln Ala Gln Thr Gly Leu Val Thr Lys Glu  
 370 375 380  
 His Leu Glu Leu Ala Val Thr Lys Pro Thr Ser Pro Val Ser Phe Ala  
 385 390 395 400  
 Leu Arg Asn Asp Ala Glu Asp Lys Glu Arg Ile Leu Arg Ala Leu Lys  
 405 410 415  
 Gln Ala Asn Gly Asn Arg Lys Val Ala Ala Glu Leu Leu Gly Ile Gly  
 420 425 430  
 Arg Thr Thr Leu Tyr Ser Lys Leu Glu Glu Tyr Gly Leu Lys Tyr Lys  
 435 440 445  
 Phe Arg Gln Ser  
 450

<210> 6924  
 <211> 433  
 <212> PRT  
 <213> B.fragilis

<400> 6924  
 Phe Leu Phe Asn Ile Cys Tyr Met Arg Ser Leu Phe Leu Ile Phe Phe  
 1 5 10 15  
 Phe Cys Tyr Val Thr Gly Lys Ala Gln Asp Arg Ala Cys Val Val Ser  
 20 25 30  
 Glu Lys Asp Ser Ile Pro Leu Ser Asn Val Tyr Ile Cys Leu Lys Asp  
 35 40 45  
 Arg Arg Val Ile Ala Ile Ser Asp Glu Lys Gly Val Phe Ser Leu Glu  
 50 55 60  
 Lys Tyr Asp Ser Leu Ser Leu Asn Asp Thr Leu Tyr Phe Ser His Ile  
 65 70 75 80  
 Asn Tyr Leu His Lys Lys Leu Ser Tyr Gly Asp Leu Ile Lys Asn Arg  
 85 90 95  
 Cys Thr Val Phe Leu Ile Glu Asn Asn Arg Val Leu Glu Glu Val Ser  
 100 105 110  
 Ile Phe Ser Asn Arg His Leu Asn Arg Phe Leu His Tyr Glu Ile Leu  
 115 120 125  
 Ser Pro Leu Lys Arg Gly Val Tyr Ser Phe Ala Ser Val Leu Val Asp  
 130 135 140  
 Gly Gln Ile Tyr Ile Val Gly Gly Ser Thr Ser Cys Gly Pro Phe Gln  
 145 150 155 160

Ser Asn Ile Arg Ser Thr Leu Phe Trp Glu Lys Tyr Ser Asn Met Met  
 165 170 175  
 Tyr Arg Tyr Asp Ile Lys Gln Asp Lys Trp Glu Thr Ile Arg His Lys  
 180 185 190  
 Phe Arg Glu Arg Ala Tyr His Thr Ala Gly Tyr Tyr Asp Gly Lys Ile  
 195 200 205  
 Phe Ile Leu Gly Gly Lys Arg Leu Ser Glu Thr Arg Ile Val Asp Tyr  
 210 215 220  
 Leu Asp Asn Ala Ile Glu Ile Tyr Asp Ile Lys Arg Asp Thr Val Trp  
 225 230 235 240  
 Thr Asp Tyr Thr Asn Pro His Gln Ala Thr Leu Leu Gly Ser Val Val  
 245 250 255  
 Tyr Lys Asp Asn Met Ile Val Leu Gly Gly Val Lys Lys Val Leu Gln  
 260 265 270  
 Asn Asn Glu Gly Val Tyr Ser Asp Glu Met His Leu Trp Asn Leu Lys  
 275 280 285  
 Ser Gly Tyr Trp Tyr Glu Leu Gly Lys Met Pro Ile Arg Gln Ala Pro  
 290 295 300  
 Glu Thr Ile Leu Val Asp His Cys Ile Tyr Leu Ile Gly Asn Arg Asn  
 305 310 315 320  
 Gly Gly Gly Trp Ser Ile Glu Cys Tyr Asn Leu Leu Thr Gly Ala Trp  
 325 330 335  
 Thr Asn Ala Gly His Leu Leu Tyr Arg Leu Gly Trp Pro Ser Leu Ala  
 340 345 350  
 Tyr His Asn Asp Ile Ile Tyr Ile Phe Glu Gln Gly Val Val Gln Thr  
 355 360 365  
 Phe Asn Ile Lys Ser Arg Gln Val Arg Ser Tyr Met Ile Asp Leu Lys  
 370 375 380  
 Leu Lys Ser Pro Ala Leu Tyr Tyr Phe Asp Gly Lys Leu Tyr Ile Leu  
 385 390 395 400  
 Gly Gly Phe Tyr Met Gly Asp Pro Ser Arg Asn Val Tyr Ser Val Asp  
 405 410 415  
 Leu Lys Glu Phe Asp Lys Thr Glu Val Asp Tyr Tyr Tyr Asn Asn Val  
 420 425 430  
 Arg

&lt;210&gt; 6925

&lt;211&gt; 85

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6925

His Arg Val Lys Thr Cys Ser Leu Asp Val Asn Lys Lys Phe Phe Lys  
 1 5 10 15  
 Cys Lys Arg Leu Val Ile Cys Ala Gln Glu Pro Ala Asn Leu Gln Lys  
 20 25 30  
 Thr Leu Thr Met Leu Ile Glu Glu Arg Tyr Lys Asp Glu Asp Thr Gly  
 35 40 45  
 Ser Asp Asp Val Asn Ser Leu Pro Lys Leu Glu Leu Ser Tyr Ser Ala  
 50 55 60  
 Asp Val Cys Phe Phe Leu Lys Gln Ala Lys Arg Thr Ile Ile Asn  
 65 70 75 80  
 Leu Lys Ile Lys Lys  
 85

&lt;210&gt; 6926

&lt;211&gt; 77

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6926

His	Phe	Tyr	Asn	Val	Val	Lys	Trp	Val	Tyr	Thr	Lys	Tyr	Val	Leu	Leu
1			5						10					15	
Tyr	Pro	Leu	Lys	Cys	Ser	Lys	Phe	His	Leu	Cys	Ala	Lys	Val	Gln	Ile
			20					25					30		
Leu	Phe	Tyr	Ile	Leu	Leu	Ile	Ser	Ile	Tyr	Arg	Tyr	Leu	Tyr	Gly	Ser
			35				40					45			
Ile	Asp	Asn	Ile	Gln	Leu	Ser	Met	Thr	Val	Ile	Ala	Asp	Trp	Val	Thr
	50					55					60				
Gly	Phe	Phe	Ala	Thr	Phe	Phe	Val	Arg	His	His	Ala	His			
65					70					75					

&lt;210&gt; 6927

&lt;211&gt; 941

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6927

Ile	Pro	Asp	Lys	Gln	Gly	Tyr	Arg	Pro	Ser	Gly	Arg	Val	Gln	Gly	Ser
1			5						10					15	
Glu	Gly	Ser	Val	Pro	Leu	His	Leu	Leu	Arg	Arg	Ser	Ala	Gly	Ser	Leu
			20					25					30		
Arg	Pro	Val	Arg	His	Pro	Leu	His	Gly	Arg	His	Arg	Pro	Val	Asp	Met
			35				40					45			
Tyr	Arg	Leu	Arg	Arg	Gly	Ile	Val	Phe	Arg	Pro	Arg	Met	Ala	Asp	Leu
	50					55					60				
Arg	Ala	Glu	Arg	Pro	Val	Arg	Arg	Ile	Arg	Ala	Asp	Glu	Ile	Gly	Ser
65					70					75					80
Gly	Lys	Glu	Pro	Ser	Pro	Ile	Pro	Tyr	Gln	Pro	Ala	Ala	Asp	His	Pro
				85					90					95	
Ile	Ile	Gln	Thr	Ala	Thr	Lys	Gly	Arg	Asn	Asp	Met	Arg	Asn	Thr	Ser
			100					105					110		
Lys	Met	Thr	Thr	Leu	Glu	Asn	Lys	Phe	Pro	Leu	Leu	Ala	Val	Glu	His
			115				120					125			
Gly	Cys	Ile	Ile	Ser	Lys	Asp	Ala	Asp	Ile	Thr	Val	Ala	Phe	Glu	Val
	130					135					140				
Glu	Leu	Pro	Glu	Leu	Tyr	Thr	Val	Thr	Asp	Ala	Glu	Tyr	Glu	Ala	Ile
145					150					155					160
His	Gly	Cys	Trp	Cys	Lys	Ala	Ile	Lys	Val	Leu	Pro	Asp	Phe	Cys	Val
				165					170					175	
Val	His	Lys	Gln	Asp	Trp	Phe	Ile	Lys	Glu	Lys	Tyr	Lys	Pro	Glu	Leu
			180					185					190		
Gln	Lys	Asp	Asp	Met	Ser	Phe	Leu	Ser	Arg	Ser	Phe	Glu	Arg	His	Phe
			195				200					205			
Asn	Glu	Arg	Pro	Tyr	Leu	Lys	His	Thr	Cys	Tyr	Leu	Tyr	Leu	Thr	Lys
	210					215					220				
Thr	Thr	Lys	Glu	Arg	Asn	Arg	Met	Gln	Ser	Asn	Phe	Ser	Thr	Leu	Cys
225					230					235					240
Arg	Gly	His	Ile	Ile	Pro	Lys	Glu	Leu	Asp	Lys	Glu	Thr	Ala	Gly	Lys
				245					250					255	
Phe	Met	Glu	Ala	Glu	Gln	Phe	Glu	Arg	Ile	Met	Asn	Asp	Ser	Gly	
			260				265					270			
Phe	Val	Arg	Leu	Arg	Arg	Leu	Ser	Thr	Asp	Glu	Ile	Val	Gly	Thr	Glu
			275				280					285			
Lys	Ser	Thr	Gly	Leu	Ile	Glu	Arg	Tyr	Phe	Ser	Leu	Met	Pro	Glu	Gly
	290					295					300				
Asp	Thr	Thr	Leu	Gln	Asp	Ile	Asp	Leu	Ser	Ala	Lys	Glu	Met	Arg	Ile

305					310					315				320
Gly	Asp	Asn	Arg	Leu	Cys	Leu	His	Thr	Leu	Ser	Asp	Ala	Glu	Asp
				325					330					335
Pro	Gly	Lys	Val	Ala	Thr	Asp	Ile	Arg	Tyr	Glu	Lys	Leu	Ser	Thr
			340					345						350
Arg	Ser	Asp	Cys	Arg	Leu	Ser	Phe	Ala	Ser	Pro	Val	Gly	Leu	Leu
		355					360					365		
Ser	Cys	Asn	His	Ile	Tyr	Asn	Gln	Tyr	Val	Ile	Ile	Asp	Asn	Ser
	370					375				380				
Glu	Asn	Leu	Gln	Lys	Phe	Glu	Lys	Ser	Ala	Arg	Asn	Met	Gln	Ser
385					390					395				400
Ser	Arg	Tyr	Ser	Arg	Ser	Asn	Ser	Ile	Asn	Arg	Glu	Trp	Ile	Asp
				405					410					415
Tyr	Leu	Asn	Glu	Ala	His	Ser	Tyr	Gly	Leu	Thr	Ser	Val	Arg	Ala
			420					425					430	
Phe	Asn	Val	Met	Ala	Trp	Ser	Asp	Asp	Ala	Glu	Glu	Leu	Lys	His
		435					440					445		
Lys	Asn	Asp	Val	Gly	Ser	Gln	Leu	Ala	Ser	Met	Glu	Cys	Val	Pro
	450					455					460			
His	Asn	Thr	Ile	Asp	Cys	Pro	Thr	Leu	Tyr	Trp	Ala	Ala	Met	Pro
465					470					475				480
Asn	Ala	Ala	Asp	Phe	Pro	Ala	Glu	Glu	Ser	Phe	His	Thr	Phe	Ile
			485						490					495
Gln	Ala	Val	Cys	Leu	Phe	Thr	Glu	Glu	Thr	Asn	Tyr	Arg	Ser	Ser
			500					505					510	
Ser	Pro	Phe	Gly	Ile	Lys	Met	Val	Asp	Arg	Leu	Thr	Gly	Lys	Pro
		515					520					525		
His	Leu	Asp	Ile	Ser	Asp	Leu	Pro	Met	Lys	Arg	Gly	Ile	Thr	Thr
	530					535					540			
Arg	Asn	Lys	Phe	Val	Leu	Gly	Pro	Ser	Gly	Ser	Gly	Lys	Ser	Phe
545					550					555				560
Met	Asn	His	Leu	Val	Arg	Gln	Tyr	Tyr	Glu	Gln	Gly	Thr	His	Val
			565						570					575
Leu	Val	Asp	Thr	Gly	Asn	Ser	Tyr	Gln	Gly	Leu	Cys	Glu	Met	Ile
		580						585					590	
Arg	Lys	Thr	Asn	Gly	Ala	Asp	Gly	Val	Tyr	Phe	Thr	Tyr	Thr	Glu
		595					600					605		
Lys	Pro	Ile	Ser	Phe	Asn	Pro	Phe	Tyr	Thr	Asp	Asp	Tyr	Val	Phe
	610					615					620			
Val	Glu	Lys	Lys	Asp	Ser	Ile	Lys	Thr	Leu	Leu	Leu	Thr	Leu	Trp
625					630					635				640
Ser	Glu	Asp	Asp	Lys	Val	Thr	Lys	Thr	Glu	Ser	Gly	Glu	Leu	Gly
			645						650					655
Ala	Val	Asn	Ala	Tyr	Ile	Glu	Arg	Ile	Arg	Ala	Asp	Arg	Ser	Ile
		660						665					670	
Pro	Ser	Phe	Asn	Thr	Phe	Tyr	Glu	Tyr	Met	Arg	Asp	Asp	Tyr	Arg
		675					680					685		
Glu	Leu	Ala	Glu	Arg	Glu	Ile	Lys	Val	Glu	Lys	Ser	Asp	Phe	Asn
	690					695					700			
Asp	Asn	Met	Leu	Thr	Thr	Met	Arg	Gln	Tyr	Tyr	Arg	Gly	Gly	Arg
705					710					715				720
Asp	Phe	Leu	Leu	Asn	Ser	Thr	Glu	Asn	Ile	Asp	Leu	Leu	Gly	Lys
			725						730					735
Phe	Ile	Val	Phe	Glu	Ile	Asp	Ser	Ile	Lys	Glu	Asn	Arg	Glu	Leu
		740						745					750	
Pro	Val	Val	Thr	Ile	Ile	Ile	Met	Glu	Ala	Phe	Ile	Asn	Lys	Met
		755					760					765		
Arg	Leu	Lys	Gly	Val	Arg	Lys	Gln	Leu	Ile	Val	Glu	Glu	Ala	Trp
	770					775								780

305 310 315 320  
325 330 335  
340 345 350  
355 360 365  
370 375 380  
385 390 395  
405 410 415  
420 425 430  
435 440 445  
450 455 460  
465 470 475  
485 490 495  
500 505 510  
515 520 525  
530 535 540  
545 550 555  
565 570 575  
580 585 590  
595 600 605  
610 615 620  
625 630 635  
645 650 655  
660 665 670  
675 680 685  
690 695 700  
705 710 715  
725 730 735  
740 745 750  
755 760 765  
770 775 780

[illegible]

<400> 6928

<210> 6929

<400> 6929

Lys 1	Cys	Ile	Lys 5	Ile	Met	Gly	Lys	Lys	Ile 10	Phe	Ala	Thr	Leu 15	Ile	Val
Ala	Val	Val	Ala 20	Thr	Phe	Ala	Gly	Tyr 25	Asn	Ile	Tyr	Gln	Ser 30	Gln	Arg
Ala	Lys	Asn	Thr	Met	Ser	Glu	Leu	Ala	Met	Ala	Asn	Val	Glu	Ala	Leu



35	40	45
Ala Asp Ile Asn Glu Thr Asp Ser Ser Gly Gln Thr Leu Tyr Cys Cys		
50	55	60
Gly Asn Glu Asp Thr Cys Ala Lys Gly Glu Asp Glu Asp Thr Gly Glu		
65	70	75
Glu Phe Ile Ile His Gly Val Leu Ser Ser Lys Lys Cys Lys		80
85	90	

<210> 6930  
 <211> 313  
 <212> PRT  
 <213> B.fragilis

<400> 6930

Arg Leu Ile Lys Leu Tyr Ser Pro Met Ile His Ile Ala Cys Asn Ile		
1	5	10
Asp Ser Asn Phe Thr Val His Cys Ala Val Thr Leu Val Ser Leu Phe		
	20	25
Glu Asn Asn Arg Glu Ser Glu Phe Cys Ile His Ile Val Ala Ser Thr		
	35	40
Leu Pro Ser Glu Asp Lys Glu Val Leu Lys Thr Ile Ala Gly Arg Tyr		
50	55	60
Gly Asn Glu Val Arg Phe Tyr Phe Pro Pro Glu Asp Leu Leu His Asn		
65	70	75
Phe Ser Ile Lys Lys Phe Gly Lys Arg Ile Ser Met Ala Thr Tyr Tyr		
	85	90
Arg Cys Met Phe Ser Ala Ile Leu Pro Glu Glu Val Asp Lys Val Leu		
	100	105
Tyr Leu Asp Cys Asp Ile Val Ile Leu Gly Asp Ile Ser Glu Tyr Trp		
	115	120
Asn Thr Asp Met Ser Asn Tyr Ser Val Ala Cys Val Glu Asp Ile Gly		
	130	135
Ser Asn Glu Asp Glu Arg Tyr Asp Ile Leu Lys Tyr Asp Lys Ser Phe		
145	150	155
Ser Tyr Phe Asn Ala Gly Val Leu Leu Ile Asn Leu Arg Tyr Trp Arg		
	165	170
Glu His Lys Ile Asp Glu Gln Cys Glu Gln Tyr Phe Leu Arg Tyr Pro		
	180	185
Glu Arg Ile Arg Phe Asn Asp Gln Asp Leu Leu Asn Ala Val Leu His		
	195	200
Glu Ser Lys Leu Phe Val Pro Leu Lys Trp Asn Met Gln Asp Gly Phe		
	210	215
Tyr Arg Tyr Gly Ala Asp Lys Gly Val Lys Asp Lys Lys Gln Leu His		
225	230	235
Gln Gln Leu Leu His Pro Val Ile Leu His Tyr Thr Asn Lys Lys Pro		
	245	250
Trp Asn Tyr Asp Ser Met His Pro Leu Lys Gly Glu Tyr Phe Lys Tyr		
	260	265
Leu Asp Met Thr Pro Trp Lys Gly Lys Arg Pro Leu Ser Thr Phe Lys		
	275	280
Ala Arg Leu Ser Trp Trp Leu Lys Ser Leu Pro Tyr Ala Leu Arg Leu		
	290	295
Arg Lys Pro Lys Tyr Val Asn Leu Ile		300
305	310	

<210> 6931  
 <211> 198  
 <212> PRT  
 <213> B.fragilis

&lt;400&gt; 6931

Trp Leu Ala Asn Glu Arg Leu Leu Pro Tyr Val Val Ser Val Thr Lys  
 1 5 10 15  
 Asn Ser Val Thr Met Asn Arg Leu Ile Leu Leu Val Glu Ser Arg Ile  
 20 25 30  
 Arg Gly Asp Val Tyr Val Arg Phe Gly Gly Glu Leu Pro Lys Thr His  
 35 40 45  
 Arg Ser Asn Thr Ala Gly Arg Trp Met Leu Ser Leu Pro Leu Lys Ser  
 50 55 60  
 Val Asn Asn Leu Val Lys Asp Ala Arg Lys Val Gln Gln Thr Ile Leu  
 65 70 75 80  
 Met Val Gly Asp Ile Thr Asp Thr Tyr Val Thr Ser Phe Gln Arg Met  
 85 90 95  
 Met Arg Asp Asp Asn Phe Thr Val Glu Glu Leu Gly Ala Ile Ala Phe  
 100 105 110  
 Gly Tyr Thr Lys Leu Leu Glu Glu Ser Asn Asp Val Leu Thr Glu Leu  
 115 120 125  
 Lys Asn Val Val Asn Ile Thr Thr Leu Ser Met Thr Asp Lys Glu Arg  
 130 135 140  
 Met Asp Val Val Glu Arg Cys Tyr Ser Lys Met Lys Arg Tyr Arg Asn  
 145 150 155 160  
 Leu Val Ser Tyr Tyr Thr Asn Lys Asn Ile Ser Val Ser Tyr Leu Arg  
 165 170 175  
 Ala Lys Lys Lys Asn Asp Leu Asp Arg Ile Met Gly Leu Tyr Gly Asn  
 180 185 190  
 Met Asn Glu Arg Tyr Trp  
 195

&lt;210&gt; 6932

&lt;211&gt; 269

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6932

Lys His Lys Asn Met Lys Thr Arg Ala Leu Arg Ser Tyr Leu Cys Phe  
 1 5 10 15  
 Thr Leu Leu Ala Thr Ala Phe Leu Leu Gly Leu Ala Gly Cys Asp Lys  
 20 25 30  
 Glu Glu Ser Glu Pro Leu Arg Ile Gly Asp Asp Ser Phe Asn Asn Ile  
 35 40 45  
 Glu Asn Gly Val Trp Thr Ala Tyr Tyr Pro Asn Thr Asn Gln Thr Ser  
 50 55 60  
 Ile Thr Ile Tyr Gly Gly Val Lys Pro Tyr Thr Val Ser Ser Asn Ser  
 65 70 75 80  
 Asp Ile Leu Lys Val Asn Met Asp Lys Leu Ser Asp Ala Phe Asn Tyr  
 85 90 95  
 Glu Thr Leu Gly Val Gly Asp Ala Glu Val Thr Ile Thr Asp Ala Lys  
 100 105 110  
 Gly Glu Ser Val Gly Leu Lys Val Lys Ile Asp Tyr Arg Ser Asp Lys  
 115 120 125  
 Met Lys Ile Val Lys Leu Asp Ala Tyr Val Lys Gly Asp Lys Met Thr  
 130 135 140  
 Val Ala Ala Gln Lys Glu Leu Lys Glu Lys Ala Leu Ala Ser Ile Pro  
 145 150 155 160  
 Val Lys Ala Gly Gly Gly Tyr Gln Phe Ile Tyr Thr Lys Asp Gln Gly  
 165 170 175  
 Gly Ile Val Tyr Val Tyr Pro Asp Lys Tyr Gly Glu Lys Tyr Lys Glu  
 180 185 190

Gly Thr Phe Thr Arg Ser Ser Leu Ala Val Gly Asn Ser Ser Tyr Arg  
 195 200 205  
 Lys Tyr Glu Ile Lys Leu Asp Gly Met Glu Arg Thr Tyr Ile Val Gln  
 210 215 220  
 Arg Tyr Tyr Pro Ser Lys Thr Arg Ser Val Ala Met Val Pro Tyr Gly  
 225 230 235 240  
 Phe Tyr Glu Asp Leu Leu Asp Gln Phe Thr Asp Asp Tyr Pro Glu Val  
 245 250 255  
 Glu Ser Val Tyr Thr Met Gln Val Val Ser Ala Val Phe  
 260 265

<210> 6933  
 <211> 80  
 <212> PRT  
 <213> B.fragilis

<400> 6933  
 Tyr Met Lys Lys Tyr Ile Tyr Ala Phe Phe Phe Ala Ser Leu Ile Ile  
 1 5 10 15  
 Val Ala Leu Gly Leu Lys Ala Lys Ile Lys Ser Asp Thr Glu Phe Ser  
 20 25 30  
 Glu Leu Thr Leu Ser Asn Ile Glu Ala Leu Gly Met Glu Glu Thr Asp  
 35 40 45  
 Gly Ala Lys Asp Tyr Trp Cys Cys Gly Asn Glu Asp Val Cys Ala Glu  
 50 55 60  
 Gly Pro His Tyr Lys Ile Lys Gly Lys Leu Lys Glu Asn Pro Cys Lys  
 65 70 75 80

<210> 6934  
 <211> 299  
 <212> PRT  
 <213> B.fragilis

<400> 6934  
 Ser Ser Arg Asn Thr Leu Asn Lys Val Val Leu Arg Asn Lys Ile Asp  
 1 5 10 15  
 Lys Ile Arg Leu Leu Phe Cys Lys Asp Arg Glu Ser Tyr Ser Cys Phe  
 20 25 30  
 Tyr Arg Ile Leu Gly Phe Tyr Pro Arg Asn Ile Arg Leu Tyr Glu Gln  
 35 40 45  
 Ala Leu Leu His Lys Ser Thr Ala Val Arg Ser Glu Lys Gly Arg Pro  
 50 55 60  
 Leu Asn Asn Glu Arg Leu Glu Phe Leu Gly Asp Ala Ile Leu Asp Ala  
 65 70 75 80  
 Ile Val Gly Asp Ile Val Tyr Gln His Phe Glu Gly Lys Arg Glu Gly  
 85 90 95  
 Phe Leu Thr Asn Thr Arg Ser Lys Ile Val Gln Arg Glu Thr Leu Asn  
 100 105 110  
 Lys Leu Ala Val Glu Ile Gly Leu Asp Lys Leu Ile Lys Tyr Ser Thr  
 115 120 125  
 Arg Ser Ser Ser His Asn Ser Tyr Met Tyr Gly Asn Ala Phe Glu Ala  
 130 135 140  
 Phe Ile Gly Ala Ile Tyr Leu Asp Arg Gly Tyr Glu Cys Cys Lys Gln  
 145 150 155 160  
 Phe Met Glu Arg Arg Ile Ile Glu Pro Tyr Ile Asp Leu Asp Lys Leu  
 165 170 175  
 Ser Arg Lys Glu Val Asn Phe Lys Ser Lys Leu Ile Glu Trp Ser Gln  
 180 185 190  
 Lys Asn Lys Met Glu Val Ser Phe Glu Leu Ile Glu Gln Ser Leu Asp

195 200 205  
 Lys Glu Asn Asn Pro Val Phe Gln Thr Glu Val Arg Ile Glu Gly Ile  
 210 215 220  
 Leu Gly Gly Ser Gly Thr Gly Tyr Ser Lys Lys Glu Ser Gln Gln Asn  
 225 230 235 240  
 Ala Ala Gln Met Thr Leu Lys Lys Ile Lys Gly Asp Pro Glu Phe Met  
 245 250 255  
 Ala Ser Val Gln Glu Ala Lys Thr Gln Asn Asn Val Pro Ala Glu Asp  
 260 265 270  
 Thr Thr Pro Glu Ser Glu Met Ser Leu Thr Ala Glu Asn Gln Gln Ile  
 275 280 285  
 Asp Glu Ile Ile Ser Thr Glu Glu Ile Ser Val  
 290 295

<210> 6935  
 <211> 101  
 <212> PRT  
 <213> B.fragilis

<400> 6935  
 Asn Val Leu Asn Met Glu Ile Val Ser Ile Glu Lys Lys Thr Phe Glu  
 1 5 10 15  
 Met Met Val Ala Ser Phe Asn Ala Leu Ser Glu Lys Val Ala Ala Leu  
 20 25 30  
 Arg Arg Lys Ser Asp Gly Gly Arg Leu Glu Arg Trp Leu Thr Gly Glu  
 35 40 45  
 Glu Val Cys Gly Gln Leu Arg Ile Ser Pro Arg Thr Leu Gln Thr Leu  
 50 55 60  
 Arg Asp Lys Arg Leu Ile Gly Tyr Ser Gln Ile Asn Arg Arg Phe Tyr  
 65 70 75 80  
 Tyr Lys Pro Glu Glu Val Arg Arg Leu Ile Pro Leu Ile Gly Thr Leu  
 85 90 95  
 Tyr Pro Gly Gly Arg  
 100

<210> 6936  
 <211> 637  
 <212> PRT  
 <213> B.fragilis

<400> 6936  
 Lys Gln Leu Asn Asn Arg Lys Met Arg Lys Trp Arg Ile Glu Asp Ser  
 1 5 10 15  
 Glu Glu Leu Tyr Asn Ile Thr Gly Trp Gly Thr Ser Tyr Phe Gly Ile  
 20 25 30  
 Asn Asp Lys Gly His Val Val Val Thr Pro Arg Lys Asp Gly Val Ala  
 35 40 45  
 Val Asp Leu Lys Glu Leu Val Asp Glu Leu Gln Leu Arg Asp Val Ala  
 50 55 60  
 Ala Pro Met Leu Val Arg Phe Pro Asp Ile Leu Asp Asn Arg Ile Glu  
 65 70 75 80  
 Lys Thr Ala Tyr Cys Phe Lys Gln Ala Ser Glu Glu Tyr Gly Tyr Lys  
 85 90 95  
 Ala Gln Asn Phe Ile Ile Tyr Pro Ile Lys Val Asn Gln Met Arg Pro  
 100 105 110  
 Val Val Glu Glu Ile Ile Ser His Gly Lys Lys Phe Asn Leu Gly Leu  
 115 120 125  
 Glu Ala Gly Ser Lys Pro Glu Leu His Ala Val Ile Ala Val Asn Thr  
 130 135 140

Asp Ser Asp Ser Leu Ile Ile Cys Asn Gly Tyr Lys Asp Glu Ser Tyr  
 145 150 155 160  
 Ile Glu Leu Ala Leu Leu Ala Gln Lys Met Gly Lys Arg Ile Phe Leu  
 165 170 175  
 Val Val Glu Lys Met Asn Glu Leu Lys Leu Ile Ala Arg Met Ala Lys  
 180 185 190  
 Gln Leu Asn Val Gln Pro Asn Ile Gly Ile Arg Ile Lys Leu Ala Ser  
 195 200 205  
 Ser Gly Ser Gly Lys Trp Glu Glu Ser Gly Gly Asp Ala Ser Lys Phe  
 210 215 220  
 Gly Leu Thr Ser Ser Glu Leu Leu Glu Ala Leu Asp Phe Leu Glu Ser  
 225 230 235 240  
 Lys Gly Met Lys Asp Cys Leu Lys Leu Ile His Phe His Ile Gly Ser  
 245 250 255  
 Gln Val Thr Lys Ile Arg Arg Ile Lys Thr Ala Leu Arg Glu Ala Ser  
 260 265 270  
 Gln Phe Tyr Val Gln Leu His Ala Met Gly Phe Asn Val Glu Phe Val  
 275 280 285  
 Asp Ile Gly Gly Gly Leu Gly Val Asp Tyr Asp Gly Thr Arg Ser Ser  
 290 295 300  
 Ser Ser Glu Ser Ser Val Asn Tyr Ser Ile Gln Glu Tyr Val Asn Asp  
 305 310 315 320  
 Ser Ile Ser Thr Leu Val Asp Ala Ser Asp Lys Asn Gly Ile Pro His  
 325 330 335  
 Pro Asn Ile Ile Thr Glu Ser Gly Arg Ala Leu Thr Ala His His Ser  
 340 345 350  
 Val Leu Ile Phe Glu Val Leu Glu Thr Ala Thr Leu Pro Gln Trp Asp  
 355 360 365  
 Asp Glu Glu Glu Ile Ala Pro Asp Ala His Glu Leu Val Gln Glu Leu  
 370 375 380  
 Tyr Gly Ile Trp Asp Thr Leu Asn Gln Asn Lys Met Leu Glu Ala Trp  
 385 390 395 400  
 His Asp Ala Gln Gln Ile Arg Glu Glu Ala Leu Asp Leu Phe Ser His  
 405 410 415  
 Gly Ile Val Asp Leu Lys Thr Arg Ala Gln Ile Glu Arg Leu Tyr Trp  
 420 425 430  
 Ser Ile Thr Arg Glu Ile Asn Gln Ile Ala Gly Gly Leu Lys His Ala  
 435 440 445  
 Pro Asp Glu Phe Arg Gly Leu Ser Lys Leu Leu Ala Asp Lys Tyr Phe  
 450 455 460  
 Cys Asn Phe Ser Leu Phe Gln Ser Leu Pro Asp Ser Trp Ala Ile Asp  
 465 470 475 480  
 Gln Ile Phe Pro Ile Met Pro Ile Gln Arg Leu Asp Glu Lys Pro Asp  
 485 490 495  
 Arg Ser Ala Thr Leu Gln Asp Ile Thr Cys Asp Ser Asp Gly Lys Ile  
 500 505 510  
 Ala Asn Phe Ile Ser Thr Arg Asn Val Ala His Tyr Met Pro Val His  
 515 520 525  
 Ser Leu Lys Gln Lys Glu Pro Tyr Tyr Val Ala Val Phe Leu Val Gly  
 530 535 540  
 Ala Tyr Gln Glu Ile Leu Gly Asp Met His Asn Leu Phe Gly Asp Thr  
 545 550 555 560  
 Asn Ala Val His Val Ser Val Asn Glu Lys Gly Tyr Asn Ile Glu Gln  
 565 570 575  
 Ile Ile Asp Gly Glu Thr Val Ala Glu Val Leu Asp Tyr Val Gln Tyr  
 580 585 590  
 Ser Pro Lys Lys Leu Val Arg Thr Leu Glu Thr Trp Val Thr Lys Ser  
 595 600 605  
 Val Lys Glu Gly Lys Ile Ser Val Glu Glu Gly Lys Glu Phe Leu Ser

610 615 620  
 Asn Tyr Arg Ser Gly Leu Tyr Gly Tyr Thr Tyr Leu Glu  
 625 630 635

<210> 6937  
 <211> 488  
 <212> PRT  
 <213> B.fragilis

<400> 6937

Leu	Ile	Met	Lys	Lys	Leu	Phe	Tyr	Trp	Ile	Leu	Ser	Ser	Ile	Val	Leu
1				5					10					15	
Phe	Ser	Cys	Ser	Glu	Thr	Glu	Leu	Leu	Asp	Asn	Ser	Ile	Asp	Asp	Gln
			20					25					30		
Leu	Ile	Thr	Thr	Arg	Ala	Ser	Gly	Asp	Gly	Leu	Tyr	Asp	Val	Leu	Gly
		35					40					45			
Tyr	Gly	Tyr	Asp	Ile	Thr	Lys	Glu	Tyr	Leu	His	Pro	Met	Ser	Val	Cys
50						55					60				
Asn	Pro	Val	Leu	Asp	Ile	Glu	Lys	Tyr	Lys	Gln	Asp	Tyr	Gly	Glu	Arg
65					70					75					80
Leu	Val	Thr	Gly	Thr	Pro	Ser	Phe	Gly	Gly	Asp	Gln	Met	Tyr	Tyr	Gly
			85					90						95	
Tyr	Ser	Ala	Phe	Asp	Tyr	Leu	Lys	Asp	Met	Thr	Lys	Glu	Thr	Lys	Ala
			100					105					110		
Ser	Leu	Gln	Val	Ser	Asp	Thr	Ala	Lys	Gln	Ala	Ala	Tyr	Ser	Gly	Ser
		115					120					125			
Ile	Ala	Gly	Gly	Thr	Tyr	Phe	Lys	Ser	Ala	Tyr	Ser	Tyr	Ser	Ser	Lys
	130					135						140			
Tyr	Ser	Phe	Ala	Ser	Ile	Asp	Ala	Val	Arg	Lys	Leu	Lys	Tyr	Ile	Arg
145					150					155					160
Ile	Asn	Asp	Glu	Lys	Ser	Arg	Leu	Met	Asn	Tyr	Leu	Ser	Ser	Ser	Phe
			165						170					175	
Lys	Glu	Asp	Leu	Asn	Arg	Leu	Pro	Ala	Glu	Lys	Leu	Val	Lys	Arg	Tyr
			180					185					190		
Gly	Thr	His	Val	Leu	Thr	Asn	Phe	Thr	Ile	Gly	Gly	Arg	Tyr	Lys	Leu
		195				200						205			
Leu	Phe	Arg	Ser	Val	Ile	Thr	Asn	Thr	Thr	Glu	Asn	Ser	Val	Lys	Arg
	210					215						220			
Lys	Thr	Ile	Ala	Ser	Gly	Leu	Lys	Ala	Leu	Val	Gly	Asp	Ile	Gly	Ile
225					230					235					240
Gly	Val	Asn	Phe	Asp	Arg	Asn	Val	Glu	Thr	Ser	Glu	Thr	Leu	Thr	Arg
			245					250						255	
Glu	Asn	Lys	His	Arg	Met	Leu	Tyr	Val	Leu	Phe	Tyr	Gly	Gly	Thr	Gly
			260					265					270		
Thr	Ser	Leu	Val	Tyr	Asp	Leu	Glu	Lys	Gly	Leu	Pro	Thr	Arg	Ile	Asp
		275					280						285		
Ile	Gln	His	Trp	Glu	Ser	Thr	Val	Asn	Leu	Thr	Asn	Ala	Asn	Leu	Thr
	290					295					300				
Asp	Ile	Asn	Trp	Glu	Glu	Thr	Tyr	Pro	Ile	Tyr	Glu	Phe	Ile	Gln	Asp
305					310					315					320
Pro	Gln	Lys	Arg	Ala	Glu	Val	Lys	Asn	Ala	Val	Asp	Gln	Tyr	Ile	Ala
			325						330					335	
Gly	Gln	Gln	Ile	Lys	Val	Leu	Glu	Leu	Arg	Pro	Met	Tyr	Arg	Met	His
			340					345					350		
Ser	Lys	Arg	Gln	Lys	Asn	Thr	Phe	Tyr	Val	Phe	Thr	Lys	Ser	Asp	Ala
		355					360					365			
Asp	Tyr	Ile	Ser	Lys	Lys	Trp	Gly	Asp	Glu	Ser	Asn	Gly	Ile	Asp	Gly
	370					375					380				
Tyr	Ile	Cys	Val	Asn	Pro	Glu	Pro	Asn	Thr	Lys	Pro	Met	Tyr	Ser	Leu

385		390		395		400
Phe Ser Lys Arg Ser Glu Asn Thr Phe Tyr Val Tyr Asp Lys Ala Glu						
		405		410		415
Val Asp Tyr Ile Val His Lys Trp Gly Asp Thr Phe Tyr Gly Leu Asp						
		420		425		430
Gly Tyr Met Leu Thr Lys Pro Glu Asp Asn Thr Lys Pro Val Tyr Cys						
		435		440		445
Leu His Ser Asn Arg Ala Lys Asn Thr Phe Phe Val Phe Asp Lys Gly						
		450		455		460
Glu Ala Asp Arg Ile Val Arg Glu Phe Gly Asp Thr Tyr Lys Gly Leu						
		465		470		475
Val Gly Tyr Phe Tyr Asp Ala Asp						480
		485				

&lt;210&gt; 6938

&lt;211&gt; 350

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6938

Pro Ile Met Lys Val Ile Val Asp Asn Lys Ile Pro Tyr Ile Arg Glu						
1		5		10		15
Ala Ile Glu Gln Ile Ala Asp Glu Val Ile Tyr Ala Pro Gly Lys Asp						
		20		25		30
Phe Thr Pro Glu Leu Val Gln Asp Ala Asp Ala Leu Ile Arg Thr						
		35		40		45
Arg Thr Arg Cys Asp Arg Ser Leu Leu Ala Gly Ser Lys Val Lys Phe						
		50		55		60
Ile Ala Thr Ala Thr Ile Gly Phe Asp His Ile Asp Thr Ala Tyr Cys						
		65		70		75
Arg Glu Ala Gly Ile Thr Trp Thr Asn Ala Pro Gly Cys Asn Ser Ala						
		85		90		95
Ser Val Ala Gln Tyr Ile Gln Ser Ala Leu Phe Ile Leu Gln Gln Thr						
		100		105		110
Arg Gly Met Lys Leu Asn Gln Met Thr Ile Gly Ile Val Gly Val Gly						
		115		120		125
Asn Val Gly Ser Lys Val Ala Asp Val Ala Arg Lys Leu Gly Ile Gln						
		130		135		140
Val Met Leu Asn Asp Leu Pro Arg Glu Glu Arg Glu Glu Ser Thr Met						
		145		150		155
Phe Ala Ser Leu Lys Ser Ile Ala Glu Lys Cys Asp Ile Ile Thr Phe						
		165		170		175
His Val Pro Leu Tyr Lys Glu Gly Lys Tyr Lys Thr Tyr His Leu Ala						
		180		185		190
Asp Lys His Phe Phe His Ser Leu Lys Lys Gly Ala Val Ile Met Asn						
		195		200		205
Thr Ser Arg Gly Glu Val Ile Glu Thr Glu Ala Leu Leu Glu Ala Leu						
		210		215		220
Arg Ser Gly Ile Leu Ser Asp Ala Val Ile Asp Val Trp Glu His Glu						
		225		230		235
Pro Asp Ile Asp Leu Glu Leu Leu Glu Lys Val Ile Ile Gly Thr Pro						
		245		250		255
His Ile Ala Gly Tyr Ser Ala Asp Gly Lys Ala Asn Ala Thr Arg Met						
		260		265		270
Ser Leu Glu Ala Leu Cys Arg Phe Phe Leu Ile Glu Thr Asp Tyr Arg						
		275		280		285
Ile Thr Pro Pro Glu Pro Lys Asn Lys Leu Ile Ser Thr Ala Thr Tyr						
		290		295		300
Glu Glu Ala Ser Leu Met Ile Tyr Asp Pro Arg Arg Asp Ser Asp Ala						

305                      310                      315                      320  
 Leu Lys Ser His Pro Gly Leu Phe Glu Gln Leu Arg Gly Asp Tyr Pro  
                                  325                      330                      335  
 Leu Arg Arg Glu Glu Gly Ala Tyr Arg Ile Val Ile Thr Lys  
                                  340                      345                      350

<210> 6939  
 <211> 207  
 <212> PRT  
 <213> B.fragilis

<400> 6939  
 Gln Asp Met Asn Tyr Phe Leu Leu Ala Glu Thr Asp Phe Phe Arg Arg  
 1                      5                      10                      15  
 Ile Asn Glu Ala Gly Asp Cys Asn Met Glu Lys Ala Tyr Thr Val Phe  
                                  20                      25                      30  
 Ala Thr Gln Val Ile Glu Leu Cys Ile Gly Ser Pro Asp Thr Asn Arg  
                                  35                      40                      45  
 Thr Ile Ile Ala Leu Ala Tyr Ile Glu Ile Glu Leu Gln His His Pro  
                                  50                      55                      60  
 Val His Asn Leu Pro Glu Glu Lys Lys Glu Ile Ala Asn Tyr Val Ser  
 65                      70                      75                      80  
 Lys Ala Leu Ser Phe Val Arg Lys Met Gln Lys Phe Leu Ala Ala Pro  
                                  85                      90                      95  
 Gln Val Pro Pro Leu Ile Pro Ile Gln Thr Ser Thr Asp Asn Thr Asn  
                                  100                      105                      110  
 Asp Asn Thr Ala Ser Pro Leu Gln Trp Thr Gly Asn Ala Ile Asp Leu  
                                  115                      120                      125  
 Val Glu Leu Ile Tyr Gly Ile Asn Glu Met Gly Cys Ile Asn Asn Gly  
                                  130                      135                      140  
 Asn Met Pro Leu Lys Gln Leu Ala Pro Leu Leu Tyr Lys Ile Phe Gly  
 145                      150                      155                      160  
 Val Glu Ser Lys Asp Cys Tyr Arg Phe Tyr Ile Asp Ile Lys Arg Arg  
                                  165                      170                      175  
 Lys Asn Glu Ser Arg Thr Tyr Phe Leu Asp Lys Met Gln Glu Lys Leu  
                                  180                      185                      190  
 Asn Glu Lys Met Leu Arg Asp Glu Glu Met Glu Arg Met Arg Arg  
                                  195                      200                      205

<210> 6940  
 <211> 263  
 <212> PRT  
 <213> B.fragilis

<400> 6940  
 Phe Val Met Lys Glu Lys Met Lys Glu Lys Leu Thr Val Ile Lys Val  
 1                      5                      10                      15  
 Gly Gly Lys Ile Val Glu Glu Glu Ala Thr Leu Asn Gln Leu Leu Asn  
                                  20                      25                      30  
 Asp Phe Ala Ala Ile Glu Gly His Lys Val Leu Val His Gly Gly Gly  
                                  35                      40                      45  
 Arg Ser Ala Thr Lys Ile Ala Ala Gln Leu Gly Ile Asp Ser Lys Met  
                                  50                      55                      60  
 Val Asn Gly Arg Arg Ile Thr Asp Ala Glu Thr Leu Lys Val Val Thr  
 65                      70                      75                      80  
 Met Val Tyr Gly Gly Leu Val Asn Lys Asn Ile Val Ala Gly Leu Gln  
                                  85                      90                      95  
 Ala Arg Gly Val Asn Ala Leu Gly Leu Thr Gly Ala Asp Met Asn Val  
                                  100                      105                      110



```

Ile Arg Ser Met Lys Arg Pro Val Lys Glu Val Asp Tyr Gly Phe Val
    115                      120                      125
Gly Asp Val Glu Arg Val Asp Ser Thr Leu Leu Ser Asp Leu Ile His
    130                      135                      140
Lys Gly Val Val Pro Val Met Ala Pro Leu Thr His Asp Gly Gln Gly
    145                      150                      155                      160
Asn Met Leu Asn Thr Asn Ala Asp Thr Ile Ala Gly Glu Thr Ala Lys
    165                      170                      175
Ala Leu Ser Ala Ile Phe Asp Val Thr Leu Val Tyr Cys Phe Glu Lys
    180                      185                      190
Lys Gly Val Leu Arg Asp Glu Asn Asp Asp Glu Ser Val Ile Pro Gln
    195                      200                      205
Ile Asn His Ala Glu Phe Gln Arg Tyr Ile Ala Glu Gly Val Ile Gln
    210                      215                      220
Gly Gly Met Ile Pro Lys Leu Glu Asn Ser Phe Glu Ala Ile Asn Ala
    225                      230                      235                      240
Gly Val Ser Glu Val Val Ile Thr Leu Ala Ser Ala Ile His Thr Asp
    245                      250                      255
Gly Gly Thr Arg Ile Lys Lys
    260

```

```

<210> 6941
<211> 505
<212> PRT
<213> B.fragilis

```

```

<400> 6941
Arg Ala Met Asn Ile Thr Lys Ile Ile Ser Lys Val Phe Asp Ser Arg
1      5      10      15
Leu Lys Ala Ile Asp Leu Tyr Asp Thr Gln Ala Gly Glu Ile Gln His
    20      25      30
Arg Val Leu Thr Arg Leu Val Lys Gln Ala Glu Asn Thr Glu Trp Gly
    35      40      45
Lys Lys Tyr Asp Tyr Lys Ser Ile Arg Asn Tyr Glu Asp Phe Lys Asn
    50      55      60
Arg Leu Pro Ile Gln Thr Tyr Glu Glu Val Lys Pro Tyr Val Glu Arg
    65      70      75      80
Leu Arg Ala Gly Glu Gln Asn Leu Leu Trp Pro Ser Glu Ile Arg Trp
    85      90      95
Phe Ala Lys Ser Ser Gly Thr Thr Asn Asp Lys Ser Lys Phe Leu Pro
    100     105     110
Val Ser Lys Glu Ala Leu Glu Asp Ile His Tyr Arg Gly Gly Lys Asp
    115     120     125
Ala Ala Ala Ile Tyr Phe Arg Met Asn Pro Glu Ser Arg Phe Phe Ser
    130     135     140
Gly Lys Gly Leu Ile Leu Gly Gly Ser His Ser Pro Asn Leu Asn Ser
    145     150     155     160
Asn His Ser Leu Val Gly Asp Leu Ser Ala Ile Leu Ile Gln Asn Val
    165     170     175
Ser Pro Leu Ile Asn Leu Ile Arg Val Pro Ser Lys Gln Ile Ala Leu
    180     185     190
Met Asp Glu Trp Glu Ala Lys Ile Glu Ala Ile Ala Asn Ser Thr Ile
    195     200     205
Pro Val Asp Val Thr Asn Leu Ser Gly Val Pro Ser Trp Met Leu Val
    210     215     220
Leu Ile Lys Arg Ile Leu Glu Lys Thr Gly Lys Gln Thr Leu Glu Glu
    225     230     235     240
Val Trp Pro Asn Leu Glu Val Phe Phe His Gly Gly Val Ala Phe Thr
    245     250     255

```

115 120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260

Pro Tyr Arg Glu Gln Tyr Arg Gln Val Ile His Ser Ser Lys Met His  
 260 265 270  
 Tyr Val Glu Thr Tyr Asn Ala Ser Glu Gly Tyr Phe Gly Thr Gln Asn  
 275 280 285  
 Asp Leu Ser Asp Pro Ser Met Leu Leu Met Ile Asp Tyr Gly Val Phe  
 290 295 300  
 Tyr Glu Phe Ile Pro Leu Glu Asp Val Glu Lys Glu Asn Pro Arg Thr  
 305 310 315 320  
 Tyr Cys Leu Glu Glu Val Glu Leu Asn Lys Asn Tyr Ala Met Val Ile  
 325 330 335  
 Ser Thr Ser Cys Gly Leu Trp Arg Tyr Met Ile Gly Asp Thr Val Lys  
 340 345 350  
 Phe Thr Arg Lys Asn Pro Tyr Lys Phe Val Ile Thr Gly Arg Thr Lys  
 355 360 365  
 His Phe Ile Asn Ala Phe Gly Glu Glu Leu Ile Val Asp Asn Ala Glu  
 370 375 380  
 Lys Gly Leu Ala Lys Ala Cys Ala Glu Thr Gly Ala Gln Val Ser Glu  
 385 390 395 400  
 Tyr Ser Ala Ala Pro Val Phe Met Asp Ala Asn Ala Lys Cys Arg His  
 405 410 415  
 Gln Trp Leu Ile Glu Phe Ala Lys Met Pro Asp Ser Ile Glu Lys Phe  
 420 425 430  
 Ala Met Ile Leu Asp Ala Thr Leu Lys Glu Val Asn Ser Asp Tyr Glu  
 435 440 445  
 Ala Lys Arg Trp Lys Asp Ile Ala Leu Gln Pro Leu Glu Val Ile Val  
 450 455 460  
 Ala Arg Lys Gly Leu Phe His Asp Trp Leu Ala Lys Lys Gly Lys Leu  
 465 470 475 480  
 Gly Gly Gln His Lys Val Pro Arg Leu Ser Asn Thr Arg Asp Tyr Ile  
 485 490 495  
 Glu Glu Met Ile Ala Leu Asn Glu Arg  
 500 505

&lt;210&gt; 6942

&lt;211&gt; 173

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6942

Arg Leu Met Asn Met Asp Tyr Lys Tyr Ile Glu Gln Leu Leu Glu Arg  
 1 5 10 15  
 Tyr Trp Gln Cys Glu Thr Ser Leu Glu Glu Glu Ser Glu Leu Arg Ser  
 20 25 30  
 Phe Phe Ser Glu Glu Glu Val Pro Ala His Leu Leu Arg Tyr Lys Glu  
 35 40 45  
 Leu Phe Val Tyr Gln Thr Val Gln Gln Glu Ala Gly Leu Gly Lys Asp  
 50 55 60  
 Phe Asp Ala Arg Ile Leu Ala Gln Val Glu Ala Pro Val Val Lys Ala  
 65 70 75 80  
 Lys His Leu Thr Met Val Gly Arg Phe Met Pro Leu Phe Lys Ala Ala  
 85 90 95  
 Ala Val Val Ala Leu Ile Leu Ser Leu Gly Asn Val Ala Gln His Thr  
 100 105 110  
 Phe Phe Ala Glu Glu Ala Leu Asp Tyr Asn Tyr Asp Ala Tyr Lys Asp  
 115 120 125  
 Thr Tyr Asp Asp Pro Glu Val Ala Tyr Lys Gln Val Ser Ser Ala Leu  
 130 135 140  
 Met Met Leu Ser Glu Gly Ile Asn Lys Ser Gln Asp Gln Val Val Arg  
 145 150 155 160

Asp Ser Val Lys Val Glu Pro Val Arg Val Met Lys Glu  
165 170

<210> 6943  
<211> 136  
<212> PRT  
<213> B.fragilis

<400> 6943  
Thr Lys Ser Lys Asn Leu Arg Val Ala Pro Ser Lys Lys Arg Glu Ala  
1 5 10 15  
Met Lys Arg Asp Ile Ile Ile Ile Glu Asp Lys Ala Val Ser Val Thr  
20 25 30  
Gly Asn Glu Ile Trp Met Thr Ala Gly Glu Ile Ala Gly Leu Phe His  
35 40 45  
Thr Gly Val Pro Thr Val Asn Ala Ala Ile Lys Ala Ile Leu Lys Ala  
50 55 60  
Asp Val Leu Ser Asp Tyr Glu Val Cys Arg Tyr Ile Gln Leu Glu Asn  
65 70 75 80  
Gly Leu Tyr Ala Asp Val Tyr Ser Leu Glu Ile Ile Ile Pro Ile Ala  
85 90 95  
Phe Arg Leu Asn Thr Tyr Cys Thr His Val Phe Arg Thr Trp Leu Val  
100 105 110  
Gly Lys Ala Leu Ser Lys Glu Lys Arg Gln Ala Tyr Val Met Phe Ile  
115 120 125  
Gln Asn Gly Lys Ala Gly Tyr Cys  
130 135

<210> 6944  
<211> 599  
<212> PRT  
<213> B.fragilis

<400> 6944  
His Pro Gln Asn Lys Ser Met Asp Ile Gln Leu Ser Ala Gln Gln Gln  
1 5 10 15  
Ala Val Val Asp Cys Asn Glu Pro Arg Ile Val Val Lys Ala Cys Pro  
20 25 30  
Gly Ser Gly Lys Thr Phe Ser Val Ala Ala Arg Met Ala Lys Leu Leu  
35 40 45  
Gln Glu Asn Asn Leu Ser Arg His Gln Gly Ile Ala Ala Ile Ser Phe  
50 55 60  
Thr Asn Thr Ala Cys Glu Val Ile Gln Lys Glu Leu Lys Glu Thr Phe  
65 70 75 80  
Gly Cys Arg Asn Ile Asp Tyr Pro Ser Phe Ile Gly Thr Ile Asp Ser  
85 90 95  
Phe Ile Asn Thr Tyr Ile Phe Leu Pro Tyr Ala His Leu Val Met Gly  
100 105 110  
Cys Asn Tyr Arg Pro Glu Ile Val Gly Thr Thr Phe Asn Lys Trp Phe  
115 120 125  
Asp Tyr Asp Pro Thr Gln Thr Arg Tyr Ile Arg Gly Lys Leu Gly Glu  
130 135 140  
Arg Ile Ile Thr Ser Arg Asp Ala Asn Tyr Tyr Phe Asp Leu Ile Ser  
145 150 155 160  
Phe Gly Leu Asn Asp Gln Leu Leu Arg Leu Ala Pro Tyr Gln Ala Tyr  
165 170 175  
His Phe Gly Lys Ala Asp Trp Asp Asn Pro Asn Lys Lys Asp Gly Ser  
180 185 190  
Pro Lys Lys Val Ile Ser Glu Leu Lys Glu Met Lys Trp Lys His Phe

195	200	205
Asn Ala Gly Lys Val	Asn Gln Ala Asp Ala Ile Tyr Phe Thr Phe Arg	
210	215	220
Ile Leu Asp Lys Tyr	Pro Ser Ile Ala Gln Asn Ile Val Arg Arg Phe	
225	230	235
Pro Ile Leu Ile Ile	Asp Glu Ala Gln Asp Thr Thr Glu Leu Gln Met	
245	250	255
Ala Ile Ile Asp Lys	Leu Ser Gln Cys Gly Ala Glu Ser Ile Met Leu	
260	265	270
Ile Gly Asp Pro Asp	Gln Ala Ile Phe Glu Trp Asn Thr Ala Asn Pro	
275	280	285
His Leu Phe Met Glu	Lys Tyr Asn Ser Pro Asp Trp His Ser Leu Asp	
290	295	300
Leu Ser Glu Asn Arg	Arg Ser Ser Glu Lys Ile Cys Gln Leu Ala Asn	
305	310	315
His Phe Ser Gly Asn	Glu Met Cys Ser Ile Ala Ser Asp Lys Asp Tyr	
325	330	335
Thr Asp Glu Pro Cys	Ile Lys Gly His Leu Asp Thr Pro Glu Ser Val	
340	345	350
Asn Gln Ile Thr Asn	His Phe Ile Glu Lys Cys Asn Glu Met Gly Leu	
355	360	365
Asp Glu Ser Glu Tyr	Ala Val Phe Arg Gly Gln Lys Phe Gly Glu	
370	375	380
Thr Asn Phe Gly Leu	Val Asn Asn Asp Asn Ser Ser Lys Gln Asn Ser	
385	390	395
Pro Trp Ile Asn Gly	His Tyr Gly Val Arg Asp Ile Val Tyr Gly Lys	
405	410	415
Tyr Leu Ile Asp His	Gly Lys Tyr Thr Asp Gly Leu Ser Leu Ile Glu	
420	425	430
Lys Gly Cys Tyr Lys	Ile Thr Lys Arg Val Arg Tyr Val Ser Ser Ser	
435	440	445
Thr Met Arg Arg Glu	Ile Ala Glu Val Gly Phe Arg Arg His Arg Ala	
450	455	460
Glu Met Phe Asp Phe	Ile Gln Lys Leu Pro Ser Thr Asn Asp Thr Leu	
465	470	475
Ser Asn Trp Ile Thr	Lys Leu Gln Gln Met Gly Ile Asn Leu Thr Val	
485	490	495
Asp Leu Gly Lys Ala	Asn Val Arg Ile Glu Ser Leu Phe Arg Thr Val	
500	505	510
Asn His Gln Phe Arg	Gln Glu Arg Pro Tyr Leu Lys Thr Ile His Ser	
515	520	525
Val Lys Gly Met Thr	Leu Glu Ala Ile Leu Val Phe Leu Ser Lys Lys	
530	535	540
Ala Val His Thr Asn	Tyr Thr Thr Ile Leu Asn Asn Pro Ala Lys Tyr	
545	550	555
Ser Val Asp Asn Asn	Glu Glu Leu Arg Ile Val Tyr Val Ala Cys Thr	
565	570	575
Arg Pro Lys Lys Leu	Leu Trp Ile Ala Val Pro Ser Asp Asp Ile Asp	
580	585	590
Cys Trp Arg Asn Lys	Leu Phe	
595		

&lt;210&gt; 6945

&lt;211&gt; 489

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6945

Ile Lys Phe Asp Gly Met Thr Lys Pro Leu Val Ser Val Val Ile Pro

1	5	10	15
Val Tyr Asn Met Glu Glu Phe Leu Glu Glu Thr Leu Asp Ser Val Leu			
20	25	30	
Ser Ser Asp Tyr Pro Asn Phe Glu Val Ile Val Met Asp Asp Gly Ser			
35	40	45	
Lys Asp Arg Ser Leu Glu Ile Ala Glu Ser Tyr Lys Ser Arg Tyr Glu			
50	55	60	
Asn Val Arg Val Tyr Thr Gln Val Asn Ser Gly Val Ala Thr Ala Arg			
65	70	75	80
Asn His Ala Ile Ser Lys Ala Gly Gly Val Tyr Ile Leu Pro Val Asp			
85	90	95	
Ala Asp Asn Arg Ile Ser Lys Glu Leu Ile His Ser Ala Val Asp Ile			
100	105	110	
Leu Glu Ser Glu Pro Glu Val Lys Val Val Cys Pro Arg Ala Glu Phe			
115	120	125	
Phe Gly Asp Arg Ser Gly Glu Trp Val Leu Pro Pro Phe Ser Leu Ser			
130	135	140	
Leu Leu Ala Arg Lys Asn Met Met Asp Thr Cys Ala Val Tyr Arg Lys			
145	150	155	160
Ser Glu Trp Glu Arg Ile Gly Gly Tyr Cys Ala Glu Ile Val Ala Arg			
165	170	175	
Glu Asp Trp Glu Phe Trp Ile Ser Met Leu Lys Asp Gly Gly Lys Val			
180	185	190	
Val Lys Leu Pro Glu Ile Gly Leu Phe Tyr Arg Val Arg Glu Gln Ser			
195	200	205	
Lys Arg Val Thr Asp Arg Leu Lys Lys His Val Ile Asp Val Leu			
210	215	220	
Asn Arg Arg His Pro Asp Phe Phe Glu Arg Glu Leu Gly Gly Pro Leu			
225	230	235	240
Arg Tyr Gln Arg Ser Trp Ser Arg Leu Ile Asn Arg Ile Ser Arg Ile			
245	250	255	
Ile His Pro Arg Arg Val Phe Val Gly Asp Asp Phe Gln Asp Leu Ser			
260	265	270	
Ser Phe Val Arg Val Leu Pro Val His Phe Glu Asn Gly Gly Thr Leu			
275	280	285	
Ile Tyr Glu Gly Arg Asn Lys Leu Lys Glu Phe Glu Ile His Gly Arg			
290	295	300	
Lys Leu Ile Val Lys Ser Tyr Gln Leu Pro His Leu Ile Asn Arg Val			
305	310	315	320
Val Tyr Asn Ser Phe Arg Ala Ser Lys Ala Arg Arg Ser Tyr Gln Tyr			
325	330	335	
Ala Gln Met Leu Arg Lys Ala Gly Ile Gly Ser Pro Ala Pro Val Gly			
340	345	350	
Phe Tyr Ser Thr Gly Thr Trp Leu Leu Phe Gly Arg Ser Tyr Phe Val			
355	360	365	
Ser Leu Lys Ser Glu Cys Pro Tyr Thr Tyr Arg Asn Leu Leu Glu Glu			
370	375	380	
Thr Phe Thr Gly Asp Lys Glu Lys Val Leu Arg Ala Ile Ala Arg Thr			
385	390	395	400
Thr Ala Ala Leu His Glu Asn Gly Phe Leu His Lys Asp Tyr Ser Gly			
405	410	415	
Gly Asn Ile Leu Phe Arg Glu Thr Asp Lys Gly Ile Glu Val Glu Ile			
420	425	430	
Ile Asp Leu Asn Arg Met Arg Phe Gly Lys Val Asp Ile Glu Thr Gly			
435	440	445	
Cys Lys Asn Phe Glu Arg Leu Pro Gly Thr His Glu Met Phe Val Ile			
450	455	460	
Leu Ala Asp Glu Tyr Ala Lys Val Arg Gly Phe Asp Ala Asp Arg Cys			
465	470	475	480

Leu Glu Leu Ile Glu Lys Ser His Leu  
485

<210> 6946  
<211> 343  
<212> PRT  
<213> B.fragilis

<400> 6946  
Leu Phe Asn Asp Met Asn Asp Ser Leu Leu Tyr Lys Leu Ser Ser Gly  
1 5 10 15  
Lys Pro Pro Lys Phe Ile Tyr Phe Ile Ser Asn Thr Leu Asn Met Leu  
20 25 30  
Ile Pro Asn Ala Phe Tyr Arg Tyr Lys Leu Lys Ser Thr Leu Ala Gln  
35 40 45  
Leu Gln Tyr Arg Ser Asp Lys Asp Tyr Ile Glu Glu Arg Val Asn Tyr  
50 55 60  
Tyr Asn Lys Leu Ser Ser Pro Ser Ser Leu Pro Glu Lys Ser Phe Ile  
65 70 75 80  
Lys Asn Glu Phe Arg Tyr Leu Ile Phe Leu Gly Thr Leu Ala Asp Asn  
85 90 95  
Lys Lys Ser Leu Phe His Thr Ala Tyr Phe Phe Asp Thr Arg Glu Tyr  
100 105 110  
Thr Arg Trp Phe Lys Gln Ser Leu Arg Trp Gly Tyr Cys Pro Gly Asp  
115 120 125  
Val Tyr Phe Thr Pro Glu Phe Pro Ser Ile Val Lys Ser Arg Leu Leu  
130 135 140  
Thr Asp Ser Asn Asp Asn Ser Val Val Met Lys Leu Asp Lys Phe Arg  
145 150 155 160  
His Phe Met Phe Val Asn Asp Thr Met Pro Phe Ser Ser Lys Lys Asp  
165 170 175  
Met Val Ile Phe Arg Gly Lys Ile Arg Arg Ser Arg Thr Arg Lys Leu  
180 185 190  
Phe Leu Glu Met Tyr Met Asp His Pro Met Cys Asp Cys Gly Val Val  
195 200 205  
Gly Lys Asp Glu Gly Val Pro Asp Ala Trp Met Thr Pro Lys Lys Thr  
210 215 220  
Ile Arg Gln His Leu Asp Tyr Lys Phe Ile Met Ala Leu Glu Gly Asn  
225 230 235 240  
Asp Val Ala Ser Asn Leu Lys Trp Val Met Ser Ser Asn Ser Ile Ala  
245 250 255  
Val Met Pro Arg Pro Thr Cys Glu Thr Trp Phe Met Glu Gly Lys Leu  
260 265 270  
Ile Pro Asn Tyr His Tyr Ile Glu Ile Lys Pro Asp Phe Thr Asp Leu  
275 280 285  
Glu Glu Arg Leu Lys His Tyr Ile Glu His Pro Glu Glu Ala Gln Gln  
290 295 300  
Ile Ile Glu His Ala His Glu Tyr Val Ala Gln Phe Arg Asn Pro Arg  
305 310 315 320  
Arg Glu Lys Leu Ile Ser Leu Leu Val Leu Asp Lys Tyr Phe Arg Met  
325 330 335  
Thr Gly Gln Asn Ile Glu Asp  
340

<210> 6947  
<211> 658  
<212> PRT  
<213> B.fragilis

&lt;400&gt; 6947

Lys Val Arg Phe Asp Asn Ala Ser Ile Val Val Tyr Tyr Cys Leu Ile  
 1 5 10 15  
 Gln Met Asn Ile Ile Asn Leu Gly Ile Leu Ala His Ile Asp Ala Gly  
 20 25 30  
 Lys Thr Ser Val Thr Glu Asn Leu Leu Phe Ala Ser Gly Ala Thr Glu  
 35 40 45  
 Lys Cys Gly Arg Val Asp Asn Gly Asp Thr Ile Thr Asp Ser Met Asp  
 50 55 60  
 Ile Glu Lys Arg Arg Gly Ile Thr Val Arg Ala Ser Thr Thr Ser Ile  
 65 70 75 80  
 Ile Trp Asn Gly Val Lys Cys Asn Ile Ile Asp Thr Pro Gly His Met  
 85 90 95  
 Asp Phe Ile Ala Glu Val Glu Arg Thr Phe Lys Met Leu Asp Gly Ala  
 100 105 110  
 Val Leu Ile Leu Ser Ala Lys Glu Gly Ile Gln Ala Gln Thr Lys Leu  
 115 120 125  
 Leu Phe Asn Thr Leu Gln Lys Leu Gln Ile Pro Thr Ile Ile Phe Ile  
 130 135 140  
 Asn Lys Ile Asp Arg Asp Gly Val Asn Leu Glu Arg Leu Tyr Leu Asp  
 145 150 155 160  
 Ile Lys Thr Asn Leu Ser Gln Asp Val Leu Phe Met Gln Thr Val Val  
 165 170 175  
 Asp Gly Leu Val Tyr Pro Ile Cys Ser Gln Thr Tyr Ile Lys Glu Glu  
 180 185 190  
 Tyr Lys Glu Phe Val Cys Asn His Asp Asp Asn Ile Leu Glu Arg Tyr  
 195 200 205  
 Leu Ala Asp Ser Glu Ile Ser Pro Ala Asp Tyr Trp Asn Thr Ile Ile  
 210 215 220  
 Asp Leu Val Ala Lys Ala Lys Val Tyr Pro Val Leu His Gly Ser Ala  
 225 230 235 240  
 Met Phe Asn Ile Gly Ile Asn Glu Leu Leu Asp Ala Ile Ser Ser Phe  
 245 250 255  
 Ile Leu Pro Pro Glu Ser Val Ser Asn Arg Leu Ser Ala Tyr Leu Tyr  
 260 265 270  
 Lys Ile Glu His Asp Pro Lys Gly His Lys Arg Ser Phe Leu Lys Ile  
 275 280 285  
 Ile Asp Gly Ser Leu Arg Leu Arg Asp Ile Val Arg Ile Asn Asp Ser  
 290 295 300  
 Glu Lys Phe Ile Lys Ile Lys Asn Leu Lys Thr Ile Tyr Gln Gly Arg  
 305 310 315 320  
 Glu Ile Asn Val Asp Glu Val Gly Ala Asn Asp Ile Ala Ile Val Glu  
 325 330 335  
 Asp Met Glu Asp Phe Arg Ile Gly Asp Tyr Leu Gly Thr Lys Pro Cys  
 340 345 350  
 Leu Ile Gln Gly Leu Ser His Gln His Pro Ala Leu Lys Ser Ser Val  
 355 360 365  
 Arg Pro Asp Arg Ser Glu Glu Arg Ser Lys Val Ile Ser Ala Leu Asn  
 370 375 380  
 Thr Leu Trp Ile Glu Asp Pro Ser Leu Ser Phe Ser Ile Asn Ser Tyr  
 385 390 395 400  
 Ser Asp Glu Leu Glu Ile Ser Leu Tyr Gly Leu Thr Gln Lys Glu Ile  
 405 410 415  
 Ile Gln Thr Leu Leu Glu Glu Arg Phe Ser Val Lys Val His Phe Asp  
 420 425 430  
 Glu Ile Lys Thr Ile Tyr Lys Glu Arg Pro Val Lys Lys Val Asn Lys  
 435 440 445  
 Ile Ile Gln Ile Glu Val Pro Pro Asn Pro Tyr Trp Ala Thr Ile Gly  
 450 455 460

Leu Thr Leu Glu Pro Leu Pro Leu Gly Thr Gly Leu Gln Ile Glu Ser  
 465 470 475 480  
 Asp Ile Ser Tyr Gly Tyr Leu Asn His Ser Phe Gln Asn Ala Val Phe  
 485 490 495  
 Glu Gly Ile Arg Met Ser Cys Gln Ser Gly Leu His Gly Trp Glu Val  
 500 505 510  
 Thr Asp Leu Lys Val Thr Phe Thr Gln Ala Glu Tyr Tyr Ser Pro Val  
 515 520 525  
 Ser Thr Pro Ala Asp Phe Arg Gln Leu Thr Pro Tyr Val Phe Arg Leu  
 530 535 540  
 Ala Leu Gln Gln Ser Gly Val Asp Ile Leu Glu Pro Met Leu Tyr Phe  
 545 550 555 560  
 Glu Leu Gln Ile Pro Gln Ala Ala Ser Ser Lys Ala Ile Thr Asp Leu  
 565 570 575  
 Gln Lys Met Met Ser Glu Ile Glu Asp Ile Ser Cys Asn Asn Glu Trp  
 580 585 590  
 Cys His Ile Lys Gly Lys Val Pro Leu Asn Thr Ser Lys Asp Tyr Ala  
 595 600 605  
 Ser Glu Val Ser Ser Tyr Thr Lys Gly Leu Gly Val Phe Met Val Lys  
 610 615 620  
 Pro Cys Gly Tyr Gln Ile Thr Lys Gly Asp Tyr Ser Asp Asn Ile Arg  
 625 630 635 640  
 Met Asn Glu Lys Asp Lys Leu Leu Phe Met Phe Gln Lys Ser Met Ser  
 645 650 655  
 Ser Lys

<210> 6948  
 <211> 703  
 <212> PRT  
 <213> B.fragilis

<400> 6948  
 Arg Gly Ser Leu His Pro Gly Asp Ala Ala Gln Glu Glu Lys Glu Glu  
 1 5 10 15  
 Ala Gln Gly Leu Gly Asp Val Ile Arg Ser Ile Asn Asn Gln Lys Asn  
 20 25 30  
 Gln Cys Met Ser Gln Gln Glu Asp Asp Leu Arg Ala Leu Ala Lys Ile  
 35 40 45  
 Met Asp Phe Leu Arg Ala Val Ser Ile Ile Leu Val Val Met Asn Val  
 50 55 60  
 Tyr Trp Phe Cys Tyr Glu Ala Ile Arg Leu Trp Gly Val Asp Ile Gly  
 65 70 75 80  
 Val Val Asp Arg Ile Leu Met Asn Phe Asn Arg Thr Ala Gly Leu Phe  
 85 90 95  
 Arg Ser Ile Leu Tyr Thr Lys Leu Phe Ala Val Leu Leu Leu Ala Leu  
 100 105 110  
 Ser Cys Leu Gly Thr Lys Gly Val Lys Gly Glu Lys Ile Thr Trp Gly  
 115 120 125  
 Arg Ile Trp Thr Ala Leu Ala Val Gly Phe Val Leu Phe Phe Leu Asn  
 130 135 140  
 Trp Trp Ile Leu Ala Leu Pro Leu Pro Ile Glu Ala Val Thr Gly Leu  
 145 150 155 160  
 Tyr Ile Leu Thr Val Gly Ala Gly Tyr Val Cys Leu Leu Met Gly Gly  
 165 170 175  
 Leu Trp Met Ser Arg Leu Leu Lys His Asn Leu Met Asp Asp Val Phe  
 180 185 190  
 Asn Asn Glu Asn Glu Ser Phe Met Gln Glu Thr Arg Leu Ile Glu Ser  
 195 200 205



Glu	Tyr	Ser	Val	Asn	Leu	Pro	Thr	Arg	Phe	Tyr	Tyr	Lys	Lys	Arg	Trp
210						215					220				
Asn	Asn	Gly	Trp	Ile	Asn	Val	Val	Asn	Pro	Phe	Arg	Ala	Ser	Ile	Val
225					230					235					240
Leu	Gly	Thr	Pro	Gly	Ser	Gly	Lys	Ser	Tyr	Ala	Val	Val	Asn	Asn	Phe
				245					250					255	
Ile	Lys	Gln	Gln	Ile	Glu	Lys	Gly	Phe	Ser	Met	Tyr	Val	Tyr	Asp	Phe
			260					265						270	
Lys	Phe	Ser	Asp	Leu	Ser	Thr	Ile	Ala	Tyr	Asn	His	Leu	Leu	Asn	His
		275					280					285			
Pro	Glu	Gly	Tyr	Lys	Val	Lys	Pro	Lys	Phe	Tyr	Val	Ile	Asn	Phe	Asp
	290					295					300				
Asp	Pro	Arg	Arg	Ser	His	Arg	Cys	Asn	Pro	Ile	His	Pro	Asp	Phe	Met
305				310						315					320
Glu	Asp	Ile	Thr	Asp	Ala	Tyr	Glu	Ser	Ala	Tyr	Thr	Ile	Met	Leu	Asn
				325					330					335	
Leu	Asn	Lys	Ser	Trp	Val	Gln	Lys	Gln	Gly	Asp	Phe	Phe	Val	Glu	Ser
			340					345					350		
Pro	Ile	Ile	Leu	Phe	Ala	Ala	Ile	Ile	Trp	Tyr	Leu	Lys	Ile	Phe	Arg
	355						360					365			
Asn	Gly	Lys	Tyr	Cys	Thr	Phe	Pro	His	Ala	Ile	Glu	Phe	Leu	Asn	Arg
370						375					380				
Arg	Tyr	Glu	Asp	Ile	Phe	Pro	Ile	Leu	Thr	Ser	Tyr	Pro	Glu	Leu	Glu
385					390					395					400
Asn	Tyr	Leu	Ser	Pro	Phe	Met	Asp	Ala	Trp	Leu	Gly	Gly	Ala	Ala	Glu
				405					410					415	
Gln	Leu	Met	Gly	Gln	Ile	Ala	Ser	Ala	Lys	Ile	Pro	Leu	Ser	Arg	Met
			420					425					430		
Ile	Ser	Pro	Gln	Leu	Tyr	Trp	Val	Met	Ser	Asp	Ser	Glu	Phe	Thr	Leu
		435					440					445			
Asp	Ile	Asn	Asn	Pro	Glu	Glu	Pro	Lys	Ile	Leu	Cys	Val	Gly	Asn	Asn
	450					455					460				
Pro	Asp	Arg	Gln	Asn	Ile	Tyr	Gly	Ala	Ala	Leu	Gly	Leu	Tyr	Asn	Ser
465					470					475					480
Arg	Ile	Val	Lys	Leu	Ile	Asn	Lys	Lys	Gly	Met	Leu	Lys	Ser	Ser	Val
			485						490					495	
Ile	Ile	Asp	Glu	Leu	Pro	Thr	Ile	Tyr	Phe	Lys	Gly	Leu	Asp	Asn	Leu
		500						505					510		
Ile	Ala	Thr	Ala	Arg	Ser	Asn	Lys	Val	Ala	Val	Cys	Leu	Gly	Phe	Gln
		515					520					525			
Asp	Phe	Ser	Gln	Leu	Val	Arg	Asp	Tyr	Gly	Asp	Lys	Glu	Ala	Lys	Val
	530					535					540				
Val	Met	Asn	Thr	Val	Gly	Asn	Ile	Phe	Ser	Gly	Gln	Val	Val	Gly	Glu
545					550					555					560
Thr	Ala	Lys	Thr	Leu	Ser	Glu	Arg	Phe	Gly	Lys	Val	Leu	Gln	Lys	Arg
				565					570					575	
Gln	Ser	Ile	Ser	Ile	Asn	Arg	Gln	Asp	Val	Ser	Thr	Ser	Ile	Asn	Thr
			580					585					590		
Gln	Met	Asp	Ala	Leu	Ile	Pro	Pro	Ser	Lys	Ile	Ser	Gly	Leu	Thr	Gln
		595				600						605			
Gly	Met	Phe	Val	Gly	Ser	Val	Ser	Asp	Asn	Phe	Asn	Glu	Arg	Ile	Glu
610					615						620				
Gln	Lys	Ile	Phe	His	Cys	Glu	Ile	Val	Val	Asp	Ala	Glu	Lys	Val	Lys
625					630					635					640
Arg	Glu	Glu	Lys	Ala	Tyr	Lys	Lys	Ile	Pro	Val	Ile	Thr	Asp	Phe	Thr
				645					650					655	
Asp	Glu	Asn	Gly	Asn	Asp	Arg	Met	Lys	Glu	Thr	Val	Gln	Glu	Asn	Tyr
			660					665				670			
Arg	Arg	Ile	Lys	Glu	Glu	Val	Lys	Gln	Ile	Val	Gln	Glu	Glu	Leu	Glu

675	680	685
Arg Ile Ala Asn Asp Glu Asn Leu Lys His Leu Leu Gln Gln Lys		
690	695	700

<210> 6949  
 <211> 249  
 <212> PRT  
 <213> B.fragilis

<400> 6949  
 Ala Val Gly Glu Asp Tyr Lys Thr Arg Ile Leu Arg Asn Gly Tyr Ser  
 1 5 10 15  
 Leu Arg Thr Tyr Tyr His Arg Leu Ser Val Glu Tyr Thr Lys Met Arg  
 20 25 30  
 Glu Tyr Ala Lys Ala Lys Glu Cys Ile Asp Lys Met Leu Ala Glu Lys  
 35 40 45  
 Met Asp Asp Leu Thr Cys Glu Ala Cys Glu Leu Asn Phe Met Leu Asp  
 50 55 60  
 Tyr Tyr Leu Glu Thr Gly Gln Phe Glu Glu Ala Tyr Asn Arg Ala Gln  
 65 70 75 80  
 Pro Leu Ile Thr Arg Gln Val Ser Cys Tyr Glu Ala Asn Leu Arg Ala  
 85 90 95  
 Tyr Met Lys Leu Ala Tyr Tyr Ala Cys Lys Ala Gly Lys Pro Glu Ile  
 100 105 110  
 Ala Ala Asp Met Cys Ala Arg Ala Glu Glu Ala Leu Val Gly Arg Glu  
 115 120 125  
 Lys Asp Glu Tyr Leu Leu Leu Tyr Leu Gly Leu Phe Ile Ala Tyr Tyr  
 130 135 140  
 Phe Met Thr His Pro Asp Arg Gly Trp Glu Tyr Ala Glu Arg Cys Ile  
 145 150 155 160  
 Pro Trp Ser Leu Asn Thr Asn Met Gln Lys Lys Tyr Arg Phe Ser Cys  
 165 170 175  
 Asp Met Val Glu Ala Leu Ser Tyr Glu Ser His Glu Glu Val Ser Leu  
 180 185 190  
 Ser Leu Pro Glu Glu Phe Pro Leu Tyr Arg Ala Asp Gly Ile Tyr Ser  
 195 200 205  
 Val Ala Ala Leu Arg Asp Tyr Phe Tyr Lys Gln Ala Thr Gln Leu Ala  
 210 215 220  
 Ser Leu Tyr Asp Thr Arg Asn Gly Asn Asn Gly Tyr Gln Glu Arg Leu  
 225 230 235 240  
 Phe Asn Val Asn Leu Ile Gly Asn Leu  
 245

<210> 6950  
 <211> 233  
 <212> PRT  
 <213> B.fragilis

<400> 6950  
 Phe Leu Leu Asp Ile Leu Ser Met Arg Ile Leu Tyr Val Leu Phe Phe  
 1 5 10 15  
 Leu Leu Thr Leu Asn Ser Cys Gln Lys Val Lys Glu Lys Glu Val Val  
 20 25 30  
 Arg Leu Met Lys Glu Trp Asn Arg Lys Glu Val Leu Phe Pro Asp Asp  
 35 40 45  
 Leu Leu Phe Thr Val Leu Glu Lys Asp Thr Leu Lys Glu Ile Pro Lys  
 50 55 60  
 Ser Asp Tyr Thr Ile Ile Thr Tyr Val Asp Ser Ile Gly Cys Thr Ser  
 65 70 75 80

Cys Lys Leu Lys Leu Gln Asn Trp Leu Leu Leu Glu Arg Lys Leu Arg  
 85 90 95  
 Ser Ile Thr Asn Lys Arg Val Ser Cys Leu Phe Val Ile His Pro Lys  
 100 105 110  
 Ser Lys Lys Glu Val Asn Tyr Ile Leu Gln Glu Asn His Phe Asp Cys  
 115 120 125  
 Pro Val Cys Ile Asp Asp Ser Asp Ile Phe Asn Lys Leu Asn Lys Phe  
 130 135 140  
 Pro Ala Asn Ile Met Tyr Gln Thr Phe Leu Leu Asp Ala Gly Asn Lys  
 145 150 155 160  
 Val Val Ala Ile Gly Asn Pro Ile His Asn Asp Arg Ile Lys Lys Leu  
 165 170 175  
 Tyr Leu Asp Ile Ile Ser Gly Asn Lys Met Thr Ser Lys Lys Gly Ser  
 180 185 190  
 Met Gln Thr Glu Ile Thr Val Ser Glu Thr Leu Phe Asp Phe Gly Lys  
 195 200 205  
 Ile Ser Phe Lys Glu Ser Gln Lys Cys Ile Phe Met Leu Gln Ser Tyr  
 210 215 220  
 Tyr Lys Lys Val Glu Cys Gly Arg Met  
 225 230

&lt;210&gt; 6951

&lt;211&gt; 599

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6951

Lys Leu Leu Glu Glu Asp Asn Asp Lys Asn Arg Met Glu Lys Glu Gly  
 1 5 10 15  
 Asn Asn Leu Phe Gln Val Asn Leu Lys Gly Met Ile Ala Leu Leu Ser  
 20 25 30  
 Glu His Ile Tyr Ser Asn Pro Asn Thr Phe Val Arg Glu Leu Leu Gln  
 35 40 45  
 Asn Ser Val Asp Ala Ile Thr Ala Leu His Asn Ile Asp Glu Asn Tyr  
 50 55 60  
 Ser Gly Arg Ile Asp Val Phe Leu Asn Gly Asp Gly Ser Met Val Phe  
 65 70 75 80  
 Gln Asp Asn Gly Ile Gly Leu Lys Glu Glu Glu Val Tyr Arg Phe Leu  
 85 90 95  
 Thr Val Ile Gly Glu Ser Ser Lys Arg Asp Thr Pro Asp Ala Asp Asp  
 100 105 110  
 Phe Ile Gly Arg Phe Gly Ile Gly Leu Leu Ser Cys Phe Val Val Thr  
 115 120 125  
 Asn Glu Ile Arg Val Glu Ser Arg Ser Ala Met Gly Gly Asn Pro Val  
 130 135 140  
 Cys Trp Cys Gly Lys Val Asp Gly Thr Tyr Gln Thr Thr Phe Pro Asp  
 145 150 155 160  
 Glu Glu Trp Glu Ile Gly Ser Arg Val Val Leu Arg Pro Lys Asn Glu  
 165 170 175  
 Trp Ala His Leu Phe Glu Tyr Glu Val Phe Lys Lys Ile Leu Val Asn  
 180 185 190  
 Tyr Gly Glu Val Leu Pro Tyr Pro Val Tyr Leu His Arg Gly Glu Glu  
 195 200 205  
 Glu Glu Leu Val Asn Thr Pro Ser Pro Val Trp Leu Asp Pro Lys Ala  
 210 215 220  
 Thr Arg Lys Glu Leu Leu Asp Tyr Gly Thr Lys Val Phe Gln Ser Ser  
 225 230 235 240  
 Ala Leu Asp Ala Phe Pro Ile Arg Thr Glu His Gly Arg Ile Glu Gly  
 245 250 255

Val Leu Tyr Val Leu Pro Phe Arg Thr Gln Phe Ser Val Arg Asn Ser  
 260 265 270  
 His Lys Val Tyr Leu Lys Arg Met Leu Leu Ser Glu Asp Asp Cys Asn  
 275 280 285  
 Leu Leu Pro Ser Trp Ala Phe Phe Ile Arg Cys Leu Val Asn Ala Asp  
 290 295 300  
 Gly Leu Leu Ser Thr Ala Ser Arg Glu Ser Phe Val Ser Asn Asp Ser  
 305 310 315 320  
 Leu Lys Asp Ala Arg Lys Glu Ile Gly Val Ala Ile Lys Glu Tyr Leu  
 325 330 335  
 Arg Ala Leu Val Gln Asn Asn Arg Ser Val Phe Asn Lys Ile Leu Asp  
 340 345 350  
 Val His His Phe His Ile Lys Ala Ile Ala Ser Glu Asp Asn Glu Leu  
 355 360 365  
 Leu Arg Leu Phe Met Asp Tyr Leu Pro Phe Glu Thr Asn Lys Gly Ile  
 370 375 380  
 Arg Ser Phe Gly Ser Ile Arg Ser Ser Asn Asn Thr Ile Tyr Tyr Thr  
 385 390 395 400  
 Arg Asn Leu Glu Asp Phe Arg Gln Val Arg Arg Ile Ala Gly Ala Gln  
 405 410 415  
 Gly Arg Leu Val Val Asn Ala Ala Tyr Thr Phe Asp Glu Thr Leu Leu  
 420 425 430  
 Lys Lys Tyr Ile Arg Leu Asn Gln Glu Leu Ser Leu Glu Glu Ile Ser  
 435 440 445  
 Pro Ala Arg Leu Leu Glu Glu Phe Ala Glu Val Glu Gly Asn Lys Glu  
 450 455 460  
 His Arg Ser Phe Glu Thr Lys Ala Ser Glu Leu Leu Lys Arg Phe Gly  
 465 470 475 480  
 Cys Ile Cys Arg Leu Lys His Phe Thr Pro Val Asp Thr Pro Val Ile  
 485 490 495  
 Phe Val Ala Glu Glu Lys Glu Glu Asn Ser Lys Val Ala Asn Asn Pro  
 500 505 510  
 Leu Ala Ala Val Leu Gly Ser Val Asn Ala Lys Lys Arg Leu Pro Pro  
 515 520 525  
 Thr Leu Thr Phe Asn Ala Asp Asn Glu Met Val Gln Thr Leu Leu Arg  
 530 535 540  
 Ile Gln Gly Asp Asn Lys Leu Phe Gln His Val Val His Ile Leu Tyr  
 545 550 555 560  
 Val Gln Ser Leu Leu Gln Gly Lys Tyr Pro Val Asn Ser Glu Glu Met  
 565 570 575  
 Glu Leu Phe Asn His Ser Leu Ser Glu Leu Met Thr Ala Lys Met Asn  
 580 585 590  
 Asp Phe Ile Asn Phe Leu Asn  
 595

&lt;210&gt; 6952

&lt;211&gt; 209

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6952

Ile Thr Met Glu Phe Lys Ser Leu Lys Asn Ile Glu Ser Ser Phe Arg  
 1 5 10 15  
 Gln Ile Arg Leu Phe Gly Ile Val Phe Leu Ser Leu Cys Ala Val Ile  
 20 25 30  
 Thr Val Trp Ser Val Trp Ser Ser Tyr Arg Phe Ala Glu Arg Gln Arg  
 35 40 45  
 Glu Lys Ile Tyr Val Leu Asp Asn Gly Lys Ser Leu Met Leu Ala Leu  
 50 55 60

Ser Gln Asp Leu Ser Gln Asn Arg Pro Ala Glu Ala Arg Glu His Val  
65 70 75 80  
Arg Arg Phe His Glu Leu Phe Phe Thr Leu Ser Pro Glu Lys Ser Ala  
85 90 95  
Ile Glu His Asn Val Lys Arg Ala Leu Leu Leu Ala Asp Lys Ser Val  
100 105 110  
Tyr Asn Tyr Tyr Ser Asp Phe Ala Glu Lys Gly Tyr Tyr Asn Arg Ile  
115 120 125  
Ile Ala Gly Asn Ile Asn Gln Val Leu Lys Val Asp Ser Val Val Cys  
130 135 140  
Asp Phe Asn Gly Tyr Pro Tyr Arg Ala Val Thr Tyr Ala Thr Gln Lys  
145 150 155 160  
Ile Ile Arg Gln Ser Asn Val Thr Glu Arg Ser Leu Val Thr Thr Cys  
165 170 175  
Arg Leu Leu Asn Ser Ser Arg Ser Asp Asp Asn Pro Asn Gly Phe Thr  
180 185 190  
Ile Glu Gly Phe Thr Ile Ile Glu Asn Lys Asp Leu Gln Thr Ile Lys  
195 200 205  
Arg

<210> 6953  
<211> 612  
<212> PRT  
<213> B.fragilis

<400> 6953  
Val Met Lys Glu Phe Phe Gln Leu Met Lys Arg Phe Val Pro Pro Tyr  
1 5 10 15  
Lys Lys Tyr Val Ile Trp Ala Leu Val Leu Asn Leu Leu Ser Ala Ile  
20 25 30  
Leu Asn Ile Phe Ser Phe Ser Leu Ile Ala Pro Ile Leu Gln Ile Leu  
35 40 45  
Phe Lys Val Asp Lys Asp Val Tyr Glu Phe Ile Pro Trp Asp Thr Val  
50 55 60  
Thr Ile Ser Thr Lys Asp Leu Leu Ile Asn Asn Phe Tyr Tyr Tyr Val  
65 70 75 80  
Ser Ala Met Ile Gln Ala Asn Gly Ala Ser Phe Thr Leu Met Ile Leu  
85 90 95  
Gly Leu Phe Leu Val Val Met Thr Phe Lys Thr Phe Cys Tyr Phe  
100 105 110  
Ala Ser Ser Ala Val Met Ile Pro Leu Arg Thr Gly Val Val Arg Asp  
115 120 125  
Ile Arg Val Met Val Tyr Asp Lys Val Leu Arg Leu Pro Leu Gly Phe  
130 135 140  
Phe Ser Glu Glu Arg Lys Gly Asp Ile Ile Ala Arg Met Ser Gly Asp  
145 150 155 160  
Val Gly Glu Ile Glu Asn Ser Val Thr Ser Ser Leu Asp Met Leu Val  
165 170 175  
Lys Asn Pro Ile Leu Ile Ile Ala Tyr Phe Thr Thr Leu Leu Val Ile  
180 185 190  
Ser Trp Gln Leu Thr Leu Phe Thr Leu Leu Val Val Pro Leu Met Gly  
195 200 205  
Trp Val Met Gly Thr Val Gly Lys Lys Leu Lys Arg Gln Ser Leu Glu  
210 215 220  
Ala Gln Ala Lys Trp Ser Asp Thr Met Ser Gln Leu Glu Glu Thr Leu  
225 230 235 240  
Gly Gly Leu Arg Ile Ile Lys Ala Phe Ile Ala Glu Asn Lys Met Ile  
245 250 255

6953 612 PRT B.fragilis

```

Asn Arg Phe Leu Lys Cys Ser Asn Glu Phe Arg Asp Ala Thr Asn Lys
260 265 270
Val Ala Thr Arg Gln Ala Leu Ala His Pro Met Ser Glu Phe Leu Gly
275 280 285
Thr Thr Met Ile Val Ile Val Leu Trp Phe Gly Gly Ser Leu Ile Leu
290 295 300
Ser Ser His Ser Ser Ile Asp Ala Ser Thr Phe Met Val Tyr Leu Thr
305 310 315 320
Ile Leu Tyr Ser Val Ile Asn Pro Leu Lys Glu Phe Ser Lys Ala Gly
325 330 335
Tyr Asn Ile Pro Lys Gly Leu Ala Ser Met Glu Arg Val Asp Lys Ile
340 345 350
Leu Lys Ala Glu Asn Lys Ile Val Glu Ile Pro Asn Pro Lys Pro Leu
355 360 365
Asn Gly Leu Glu Glu Gln Val Glu Phe Lys Asp Ile Ser Phe Ser Tyr
370 375 380
Asp Gly Lys Lys Glu Val Leu Gln His Ile Asn Leu Thr Val Pro Lys
385 390 395 400
Gly Lys Thr Ile Ala Leu Val Gly Gln Ser Gly Ser Gly Lys Ser Thr
405 410 415
Leu Val Asp Leu Leu Pro Arg Tyr His Asp Val Gln Glu Gly Thr Ile
420 425 430
Thr Ile Asp Gly Val Asn Ile Lys Asp Val Arg Ile Ser Asp Leu Arg
435 440 445
Ser Leu Ile Gly Asn Val Asn Gln Glu Ala Ile Leu Phe Asn Asp Thr
450 455 460
Phe Phe Asn Asn Ile Ala Phe Gly Val Glu Asn Ala Thr Met Glu Gln
465 470 475 480
Val Ile Glu Ala Ala Lys Ile Ala Asn Ala His Asp Phe Ile Met Glu
485 490 495
Lys Glu Asp Gly Tyr His Thr Asn Ile Gly Asp Arg Gly Ser Lys Leu
500 505 510
Ser Gly Gly Gln Arg Gln Arg Ile Ser Ile Ala Arg Ala Ile Leu Lys
515 520 525
Asn Pro Pro Ile Leu Ile Leu Asp Glu Ala Thr Ser Ala Leu Asp Thr
530 535 540
Glu Ser Glu Arg Leu Val Gln Glu Ala Leu Glu Arg Leu Met Lys Thr
545 550 555 560
Arg Thr Thr Ile Ala Ile Ala His Arg Leu Ser Thr Ile Lys Asn Ala
565 570 575
Asp Glu Ile Cys Val Leu Tyr Glu Gly Glu Ile Val Glu Arg Gly Lys
580 585 590
His Glu Glu Leu Leu Ala Lys Asn Gly Tyr Tyr Lys Arg Leu Asn Asp
595 600 605
Met Gln Ser Leu
610

```

&lt;210&gt; 6954

&lt;211&gt; 135

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6954

```

Ile Leu Arg Asp Phe Arg Arg Leu Asn Arg Phe Met Asn Leu Phe His
1 5 10 15
Ser Arg Ile Ser Thr Lys Ser Ile Gln Ser Tyr Leu Asn Phe Arg Asn
20 25 30
Tyr Leu Gly Phe Cys Gly Asp Ser Ile Tyr Val Gln Met Ile Ala Phe
35 40 45

```

Leu Arg Tyr Leu Gly Tyr Ile Gln Gln Arg Lys Leu Arg Leu Ser Pro  
 50 55 60  
 Phe Glu Gln His Gly Met Ala Phe Thr Leu Val Val Ala Glu Ser Asp  
 65 70 75 80  
 Ile Leu Pro Ile Asn Val Pro Val Thr Arg Leu Gln Phe Pro Asp Gln  
 85 90 95  
 Arg Ala Phe Gly Tyr Phe Pro Val Pro Gln Gln Thr Val Trp Thr Asp  
 100 105 110  
 Ile Val Gly Glu Arg Gly Lys Glu Gln Thr Ile Phe Pro Glu Leu Pro  
 115 120 125  
 Glu His Cys Ala Glu Leu Ser  
 130 135

<210> 6955  
 <211> 119  
 <212> PRT  
 <213> B.fragilis

<400> 6955  
 Phe Tyr Lys Leu Ser Gln Leu Asn Glu Ser Met Lys Tyr Thr Leu Glu  
 1 5 10 15  
 Ile Gln Lys Leu Leu Leu Gln Ala Gln Asn Asp Asn Leu His Pro Arg  
 20 25 30  
 Glu Lys Ala Asn Leu Leu Arg Glu Ala Ile Arg Ile Ala Asp Glu Asn  
 35 40 45  
 Glu Asp Val Gln Trp Ala Val Glu Met Arg Leu Asp Leu Ile Tyr Glu  
 50 55 60  
 Leu Asn Leu Leu Ser Ala Asp Ala Glu Glu Ile Ala Val Phe Ser Lys  
 65 70 75 80  
 Ile Leu Asp Ser Tyr Glu Asn His Lys Asp Gln Ile Asn Glu Asp Asp  
 85 90 95  
 Ile Leu Trp Lys Tyr Lys Trp Ile Trp Ser Cys Thr Phe Asp Leu Pro  
 100 105 110  
 Ser Ile Pro Met Glu Gln Val  
 115

<210> 6956  
 <211> 474  
 <212> PRT  
 <213> B.fragilis

<400> 6956  
 Arg Val Val Cys His Val Asp Gly Glu Tyr Leu Arg Leu Leu Phe Leu  
 1 5 10 15  
 Arg Lys Pro Gln Gln Gly Leu Tyr Gly Ile Lys Leu Val His Val Leu  
 20 25 30  
 Pro Leu Val Lys Glu Tyr Leu Ala Val Gly Val Ile Asp Asp Ala Leu  
 35 40 45  
 Leu Asp His Gly Arg Gly Asn Asp Val Val His Leu Leu Arg His His  
 50 55 60  
 Asp Cys Leu Pro Val Ile Leu Ala His Gly Phe Val His Ile Ala Gln  
 65 70 75 80  
 Val Leu Ser His Val Arg Arg Arg Glu Ser Leu Pro Ser Leu Phe His  
 85 90 95  
 Tyr Gln Leu Phe Pro Tyr Ala Phe Gln Ser Ala His Leu Val Asp Glu  
 100 105 110  
 Gly Phe His Asp Asn Asp Gly His Asp Arg Glu Lys Leu Ala Ile Phe  
 115 120 125  
 Leu Tyr Arg Ile Asn Leu Glu Asp Asp Glu Pro Leu Ala Glu Gln Val

```

130      135      140
Asp Val Leu Arg Gly Val Glu Gln Glu Val Val Ala Ser Ala Pro Val
145      150      155      160
Ile Leu Pro His Gly Gly Glu His Ile Val Asp Val Glu Ile Gly Leu
      165      170      175
Leu His Leu Tyr Leu Thr Phe Arg Gln Phe Ala Ala Val Val Val Ala
      180      185      190
His Ile Leu Ile Glu Gly Val Glu Arg Gly Asp Asp Ala Pro Val Ser
      195      200      205
Pro Asp Thr Leu Asp Val Cys Val His Arg Thr Ala Gln Phe Ala Ala
      210      215      220
Leu Arg Phe Arg Asn Phe Val Val Leu Arg Leu Pro Glu Cys Gln Gln
225      230      235      240
Gln Arg Leu Asp Ala Val Leu Phe Leu His Val Glu His Val Ile Ile
      245      250      255
Gly Val Lys Arg Ile Glu Arg Asn Arg Phe Leu Leu Arg Val Gly Glu
      260      265      270
Val His Ala Val Arg Pro Val Cys Leu Ala Pro Asp His Leu Ala Gln
      275      280      285
Ala Leu Ile Gly Val Ser Arg Ile His Gln Tyr His Val Arg Thr Leu
      290      295      300
Leu Val Val Leu Pro His Glu Val Val His Lys Glu Gly Phe Ala Ala
305      310      315      320
Ala Arg Arg Thr Gln His Glu Leu Val Ala Val Gly Arg Asp Ala Pro
      325      330      335
Leu His Arg Gln Val Ala Asp Val Glu Val Gln Arg Phe Ser Arg Lys
      340      345      350
Pro Val His His Leu Asp Thr Glu Gly Arg Glu Arg Thr Ala Val Val
      355      360      365
Gly Phe Leu Arg Glu Lys Ala His Arg Leu Leu Asp Glu Gly Met Glu
      370      375      380
Thr Leu Phe Arg Arg Glu Val Arg Arg Val Ala Gly His Arg Arg Pro
385      390      395      400
Val Glu Arg Arg Ala Val Asp Gly Val Val Ala Arg His Ala Leu His
      405      410      415
Ala Cys Gln Leu Ala Ala Tyr Ile Val Leu Tyr Met Leu Gln Phe Leu
      420      425      430
Arg Val Ile Ala Pro Arg His Asp Val Glu Val Arg Pro Tyr Arg Gly
      435      440      445
Gln Pro Val Gly Met Gly Phe Val Gln Val Leu Val Tyr Pro Phe Ala
      450      455      460
Val Asp Ala Val Ala Pro Ala Val Ser Gly
465      470

```

&lt;210&gt; 6957

&lt;211&gt; 117

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6957

```

Arg Met Glu Leu Leu Thr Arg Asn Asn Phe Glu Ser Trp Met Gln Lys
1      5      10      15
Leu Met Glu Arg Leu Asp Arg Gln Asp Glu Leu Leu Leu Ser Leu Gln
      20      25      30
Pro Ser Gly Lys Ala Pro Asn Pro Ile Glu Arg Ile Arg Met Phe Asp
      35      40      45
Asn Gln Asp Leu Cys Met Leu Leu Gln Ile Ser Lys Arg Thr Leu Gln
      50      55      60
Arg Tyr Arg Ser Ile Gly Ala Leu Pro Tyr Lys Thr Leu Gly Lys Lys

```



65					70					75				80
Thr	Tyr	Tyr	Ser	Glu	Glu	Asp	Val	Leu	Thr	Phe	Leu	Ser	Gly	His
				85					90					95
Lys	Asp	Phe	Lys	Lys	Glu	Asp	Ile	Ala	Phe	Tyr	Lys	Ala	Arg	Ile
			100					105					110	
Asn	Phe	Phe	Gln	Lys										
				115										

&lt;210&gt; 6958

&lt;211&gt; 409

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6958

Asp	Trp	Ser	Cys	Lys	Asn	Arg	His	Phe	Ile	Val	Cys	Phe	Leu	Tyr	Lys
1				5					10					15	
Ile	Arg	Gln	Leu	Lys	Lys	Tyr	Asp	Tyr	Leu	Cys	Thr	Ile	Ile	Tyr	Gln
		20						25					30		
Gly	Met	Glu	Thr	Val	Asn	Arg	Ile	Leu	Gln	Glu	Lys	Ile	Thr	Ala	Arg
	35						40					45			
Ile	Ala	Pro	Asn	Lys	Ala	Val	Leu	Ile	Phe	Gly	Ala	Arg	Arg	Val	Gly
	50					55				60					
Lys	Thr	Val	Met	Met	Arg	Lys	Ile	Val	Asp	Asn	Tyr	Ser	Gly	Arg	Thr
65					70				75					80	
Met	Met	Leu	Asn	Gly	Glu	Asp	Tyr	Asp	Thr	Leu	Ala	Leu	Leu	Glu	Asn
			85						90					95	
Arg	Ser	Ile	Ala	Asn	Tyr	Arg	His	Leu	Leu	Asp	Gly	Ile	Asp	Leu	Leu
			100					105					110		
Ala	Ile	Asp	Glu	Ala	Gln	Asn	Ile	Pro	Gln	Ile	Gly	Ser	Ile	Leu	Lys
		115					120					125			
Leu	Ile	Val	Asp	Glu	Ile	Pro	Gly	Ile	Ser	Val	Leu	Ala	Ser	Gly	Ser
	130					135					140				
Ser	Ser	Phe	Asp	Leu	Leu	Asn	Lys	Thr	Gly	Glu	Pro	Leu	Val	Gly	Arg
145					150				155					160	
Ser	Thr	Gln	Phe	Leu	Leu	Thr	Pro	Phe	Ser	Gln	Arg	Glu	Ile	Ala	Gln
			165					170					175		
Ile	Glu	Thr	Pro	Phe	Glu	Thr	Arg	Gln	Asn	Leu	Glu	Ala	Arg	Leu	Ile
		180					185						190		
Tyr	Gly	Ser	Tyr	Pro	Glu	Val	Val	Met	Met	Glu	Asn	Tyr	Glu	Arg	Lys
	195					200					205				
Thr	Asp	Tyr	Leu	Arg	Asp	Ile	Val	Gly	Ala	Tyr	Leu	Leu	Lys	Asp	Ile
	210					215					220				
Leu	Ala	Ile	Asp	Gly	Leu	Lys	Asn	Ser	Ser	Lys	Met	Arg	Asp	Leu	Leu
225					230					235				240	
Arg	Leu	Ile	Ala	Phe	Gln	Leu	Gly	Ser	Glu	Val	Ser	Tyr	Asp	Glu	Leu
			245						250				255		
Gly	Lys	Gln	Leu	Gly	Met	Ser	Lys	Thr	Thr	Val	Glu	Lys	Tyr	Leu	Asp
		260					265						270		
Leu	Leu	Glu	Lys	Val	Phe	Val	Ile	Tyr	Arg	Leu	Gly	Ala	Tyr	Ser	Arg
	275						280					285			
Asn	Leu	Arg	Lys	Glu	Val	Thr	Lys	Ala	Gly	Lys	Trp	Tyr	Phe	Tyr	Asp
	290					295				300					
Asn	Gly	Ile	Arg	Asn	Ala	Ile	Ile	Gly	Ala	Phe	Ser	Pro	Leu	Ala	Ile
305				310					315					320	
Arg	Gln	Asp	Val	Gly	Ala	Leu	Trp	Glu	Asn	Tyr	Ile	Ile	Gly	Glu	Arg
			325					330					335		
Arg	Lys	Ala	Asn	Phe	Asn	Glu	Gly	Leu	His	Lys	Glu	Phe	Tyr	Phe	Trp
		340					345					350			
Arg	Thr	Tyr	Asp	Lys	Gln	Glu	Ile	Asp	Leu	Ile	Glu	Glu	Cys	Ala	Asp

355 360 365  
 Ser Leu Thr Ala Leu Glu Phe Lys Trp Gly Asn Lys Met Pro Asn Ala  
 370 375 380  
 Pro Lys Val Phe Gln Glu Ala Tyr Pro His Ala Glu Phe His Val Val  
 385 390 395 400  
 Asn Arg Glu Asn Tyr Leu Glu Phe Val  
 405

<210> 6959  
 <211> 296  
 <212> PRT  
 <213> B.fragilis

<400> 6959  
 Leu Thr His Cys Met Glu Arg Thr Glu Ile Asp Ala Met Arg Gln Ile  
 1 5 10 15  
 Pro Leu Ala Asp Phe Leu Ala Arg Leu Gly His Glu Pro Val Arg Arg  
 20 25 30  
 Ser Gly Asn Glu Leu Trp Tyr Arg Ala Pro Tyr Arg Asn Glu Arg Thr  
 35 40 45  
 Pro Ser Phe Arg Val Asn Val Ala Lys Gln Leu Trp Tyr Asp Phe Gly  
 50 55 60  
 Thr Gly Lys Gly Gly Asp Ile Phe Thr Leu Ala Gly Glu Phe Ile Gly  
 65 70 75 80  
 Ser Asn Asp Phe Met Glu Gln Val Lys Phe Ile Ala Glu Thr Ala Asn  
 85 90 95  
 Met Pro Met Pro Val Pro Glu Val Ser Lys Pro Thr Phe Leu Pro Lys  
 100 105 110  
 Pro Ser Glu Pro Ala Phe Glu Gly Val Glu Ala Val Pro Leu Leu Arg  
 115 120 125  
 Ser Pro Leu Thr Asp Tyr Leu Ala Glu Arg Gly Ile Ser Tyr Asp Ile  
 130 135 140  
 Ala Ser Arg Tyr Cys Cys Arg Leu Asn Tyr Gly Val Arg Gly Lys Arg  
 145 150 155 160  
 Tyr Phe Ala Val Gly Phe Pro Asn Val Thr Gly Gly Tyr Glu Ile Arg  
 165 170 175  
 Ser Arg Phe Phe Lys Gly Cys Val Pro Pro Lys Asp Val Ser Leu Val  
 180 185 190  
 Lys Ala Glu Gly Ser Pro Ala Asp Val Cys Ser Val Phe Glu Gly Phe  
 195 200 205  
 Met Asp Phe Leu Ser Ala Ala Thr Leu Gly Leu Glu Lys Gly Asp Cys  
 210 215 220  
 Leu Val Leu Asn Ser Val Ala Asn Val Glu Lys Ala Met Lys His Leu  
 225 230 235 240  
 Asp Gly Tyr Gly Cys Ile Asp Cys Tyr Leu Asp His Asp Glu Ala Gly  
 245 250 255  
 Arg Arg Thr Leu Lys Thr Leu Lys Gly His Tyr Gly Glu Arg Ile Tyr  
 260 265 270  
 Asp Arg Ser Ala Leu Tyr Asp Gly Cys Lys Asp Leu Asn Glu Tyr Leu  
 275 280 285  
 Gln Leu Thr Thr Gln Lys Glu Gln  
 290 295

<210> 6960  
 <211> 177  
 <212> PRT  
 <213> B.fragilis

<400> 6960

Arg Cys Pro Arg Glu His Ile Ser Phe Pro Ala Glu Arg Leu Tyr Val  
 1 5 10 15  
 Ala Pro Ser Val Arg Val Thr Glu Pro Phe Pro Ile Lys Ile Leu Arg  
 20 25 30  
 Glu Thr Arg Ser Glu Leu Leu Arg Pro Leu Leu Phe Ile Ala Glu Phe  
 35 40 45  
 Cys Arg Arg Asn Gln Lys Lys Gly Leu Asn Met Lys Val Ile Thr Met  
 50 55 60  
 Glu Ser Ser Ala Phe Thr Val Leu Thr Glu Gln Ile Ala Glu Ile Ala  
 65 70 75 80  
 Ala His Val Arg Ala Val Ser Gly Glu Arg Lys Glu Lys Phe Ala Asp  
 85 90 95  
 Arg Leu Leu Asn Thr Arg Glu Ala Ala His Leu Leu Asn Val Ser Thr  
 100 105 110  
 Arg Thr Leu Gln Arg Met Arg Ser Glu His Arg Ile Gly Tyr Val Val  
 115 120 125  
 Leu Arg Gly Lys Cys Arg Tyr Arg Gln Ser Glu Ile Asp Arg Leu Leu  
 130 135 140  
 Ala Asp Cys Thr Ile Val Glu Asp Ala Ala Thr Pro Thr Glu Leu Lys  
 145 150 155 160  
 Arg Asn His Thr Leu Arg Thr Gly Gly Ser Lys Pro Lys Gly Arg Arg  
 165 170 175  
 Thr

<210> 6961

<211> 266

<212> PRT

<213> B.fragilis

<400> 6961

Arg Cys His Arg Pro Cys Pro Phe Arg Ser Arg Thr Lys Ala Val Leu  
 1 5 10 15  
 Pro Arg Ser His Gly Lys Arg Ala Cys Ala His Cys Gly Met Ala His  
 20 25 30  
 Asp Thr Thr Thr Arg Cys Arg Phe Phe Gly Gln Ala His Val Leu Thr  
 35 40 45  
 Val Arg Gly Ser Pro Gln Gly Val Ser Ala Ser Trp Arg Arg Phe Pro  
 50 55 60  
 Ser Val Pro Cys Ser Ala Leu Val Asn Asp Lys Leu Asp Ala His Ala  
 65 70 75 80  
 Pro Leu Arg Met Lys Leu Pro Arg Val Ala Thr Pro Gln Ala Thr Leu  
 85 90 95  
 Pro Glu Ile Gly Lys Gln Gly Asp Thr Val Ser His Val Lys Leu His  
 100 105 110  
 Ile Glu Arg Gln Arg Thr Ala Val Asp Glu Gly Ile Pro Val Met Glu  
 115 120 125  
 His Gly Ala Val Met Gln Tyr Leu Phe Ala Pro Val His Arg Phe Ile  
 130 135 140  
 Ser Gly Lys Ser Arg Ser Thr Cys Ile Asp Glu Tyr Asp Phe Thr Gly  
 145 150 155 160  
 Ile Gly Glu Tyr Leu Glu Val Val Ser Ala Leu Arg Arg Glu Leu Arg  
 165 170 175  
 His Gly Tyr Leu Pro Val Leu Val Arg Val Val Leu Gln Gln Val Phe  
 180 185 190  
 Ala Ala Lys His Pro Phe Val Pro Leu Phe Arg Val Gly Gly Lys Ser  
 195 200 205  
 Arg Pro Glu Thr Val Pro Ala Val Val Ala Ala Gly Ile Glu Ala Val  
 210 215 220

```
<210> 6962
<211> 68
<212> PRT
<213> B.fragilis
```

[illegible]

```
<210> 6963
<211> 807
<212> PRT
<213> B.fragilis
```

Phe 1	Arg	Arg	Arg	Leu 5	Phe	Leu	Phe	Pro	Phe 10	Leu	Arg	Arg	Arg	Glu 15	Phe
His	His	Phe	Ala	Val	Ala	Thr	Val	Ser	Gly	Asn	Met	Glu	Leu	Pro	Glu
			20					25					30		
Arg	Phe	His	Arg	Glu	Ala	Ala	Val	Leu	Pro	Ile	Ala	Tyr	Ala	His	His
		35					40				45				
Arg	Gln	Arg	Gly	Arg	Leu	His	Pro	Ser	Asp	Gly	Ile	Cys	Ala	Val	Ser
	50					55					60				
Gly	Ser	Asp	Gly	Glu	Cys	Leu	Arg	Ala	Val	Asp	Ala	His	Lys	Pro	Val
65					70					75					80
Gly	Phe	Ala	Pro	Cys	Phe	Gly	Ser	Lys	Ile	Glu	Val	Val	Ile	Leu	Ala
				85				90						95	
Ser	Arg	Phe	Lys	Val	Ala	Gln	Ser	Leu	Ala	Asp	Ser	Leu	Val	Gly	Glu
			100					105					110		
Arg	Ala	Tyr	Pro	Gln	Ala	Tyr	Glu	Arg	Arg	Ser	Thr	Ser	Asp	Ile	Met
		115					120					125			
Val	Glu	Val	Ser	Glu	Asp	Lys	Leu	Thr	Phe	Ala	Ser	Cys	Ile	Gly	Arg
	130					135					140				
His	Asp	Asp	Leu	Leu	Ala	Phe	Leu	Glu	Lys	Thr	Gly	Asp	Asp	Phe	Tyr
145					150					155					160
Leu	Arg	His	His	Ala	Ala	Val	Gly	Phe	Val	Thr	Leu	Leu	Arg	Phe	Phe
				165				170						175	
Leu	Thr	Gly	Asn	Glu	Arg	Glu	Gly	Phe	Gly	Asp	Asp	Gly	Gln	Val	Val
			180					185					190		
Thr	Asp	Glu	Ala	Ala	Tyr	Ala	Val	Ala	Val	Gly	His	Ser	Lys	Leu	Asp
		195					200					205			
Lys	Val	Ser	Glu	Cys	Pro	Cys	His	Gly	Thr	Val	Ala	Ser	Leu	Glu	Ile
	210					215					220				
Ser	Phe	Leu	Ser	Leu	Cys	Arg	Ala	His	Asp	Ala	Gly	Asp	Leu	Thr	Cys

225		230		235		240
His Gly Trp Leu Phe Cys Asn Asp Cys Leu His Ala Asp Tyr Phe Phe						
	245			250		255
Met Asn Cys Tyr Phe Gly Phe Ser Gly Gly His Gly Met Leu His Leu						
	260			265		270
His Ala Leu Asp Asp Phe Leu Leu Arg Leu Leu Leu Gln Leu Leu Leu						
	275			280		285
Phe Val Val Phe Arg Ser Gly Leu Pro Phe Leu Gln Arg Leu Phe Gln						
	290			295		300
Val Leu Gly Arg Leu Val Gly Leu Ser Phe Ala Val His Arg His Leu						
305		310			315	320
Cys Ala Ala Leu Val Gly Arg Gly Asp Leu Leu Arg Val Val Gly Val						
	325			330		335
Gly Val Val Ala Val Arg Thr Ser Leu Leu Arg Val Glu Leu Asp Val						
	340			345		350
His Arg Gly Val Glu Thr Leu Leu Val Gly His Val Leu Gln Phe Asp						
	355			360		365
Ser Phe Ala Cys Arg Val Ile Gly Phe Leu Leu Val Gly Glu Val His						
	370			375		380
Ala Ala Pro Phe Thr Asp Gly Ala Asp Ala Ala Val Gly Val Arg Pro						
385		390			395	400
Arg Val Ala Ala Leu Leu Phe Leu Trp Gly Cys Gly Ile Phe His Ala						
	405			410		415
Leu Ser Leu Ser Leu Arg Gly Ile Val Leu Gly Phe Leu Arg Leu Gly						
	420			425		430
Gly Thr Arg Arg Pro Ala Gly Ser Arg Tyr Glu Leu His Ala Ser Leu						
	435			440		445
Leu Asp Val His Leu Lys Cys Gly Asp Glu Leu Pro Ala Val Val Ala						
	450			455		460
Phe Asp Glu Leu Val Ala His Gly Gln Pro Gly Thr Gln His Ile Leu						
465		470			475	480
Leu Leu Leu Gly Asp Phe Arg Leu Ser Asp Ala Ile Arg Tyr Ala His						
	485			490		495
Leu Val Cys Arg Asn Val Arg Asp Phe Ile Arg Leu Ala Val Tyr Ala						
	500			505		510
Asp Glu Arg Gly Asp Asp Phe Thr Arg Phe Pro Val His Asp Val His						
	515			520		525
Asp Pro Ala Glu Val Ala Arg Phe Ala Gln Val Leu Thr Val Phe Val						
	530			535		540
Arg Lys Leu Val Phe Leu Val Phe Ile Glu Phe Leu Leu Leu Ala Asp						
545		550			555	560
Glu Val Arg His Glu Ala Asp Ile Ala Phe Thr Val Leu Leu Glu Gly						
	565			570		575
Lys Ala Gly Ile Gln Phe Lys Ser Leu Ala Ala Glu Leu Gly Arg His						
	580			585		590
Phe His Gln Ile Gly Leu Ala Val Val Glu His Leu Leu Lys Val Thr						
	595			600		605
Gly Leu Phe Lys Val Val Met Phe His Ala Pro Phe Leu Phe Gln Leu						
	610			615		620
Leu Pro Val Asp Phe Ala Leu Val Asp Gly Leu Val Ala Leu Ser Ala						
625		630			635	640
Leu Arg Leu Leu Arg Ala Phe Leu Leu Leu Phe His Phe Phe Leu Phe						
	645			650		655
Leu Val Phe Phe Gly Leu Leu Phe Leu Leu Leu Phe Arg Leu Leu Arg						
	660			665		670
Leu Ser Gly Gly Leu Phe Phe Leu His Leu Leu Phe Val Ala Gly Ser						
	675			680		685
Val His Leu Val Gly Arg Lys Gln Phe Leu Val Gly Phe Gly Val Phe						
	690			695		700

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65  
66  
67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82  
83  
84  
85  
86  
87  
88  
89  
90  
91  
92  
93  
94  
95  
96  
97  
98  
99  
100

Gln Gln Val Phe His His Leu His Gln Phe Val Gly Leu Val Cys Cys  
 705 710 715 720  
 Asp Thr Val Glu Thr Glu Ala Ala Gly Phe Leu Ala Leu Pro Glu Glu  
 725 730 735  
 Val Phe Glu Glu Val Val Gln His Ile Ala Val Ala Val Glu Leu Gln  
 740 745 750  
 Glu Thr Leu Arg Val Leu Arg Phe Arg Gly Gly Thr Leu Gly Gly Thr  
 755 760 765  
 Val Gly Ile Gln Pro Gly Tyr His Ala Asp Phe Ala Arg Leu Leu Val  
 770 775 780  
 Thr Asp Tyr Gln His Val Leu Phe Ala Phe Phe Leu Cys His Leu Lys  
 785 790 795 800  
 Asn Val Leu Met Gly Tyr Phe  
 805

<210> 6964  
 <211> 74  
 <212> PRT  
 <213> B.fragilis

<400> 6964  
 Ser Lys Ile Ser Phe Leu Thr Ser Arg Met Asp Ser Ser Gly Glu Ser  
 1 5 10 15  
 Arg Asp Thr Ser Phe Phe Val Asn Tyr Lys Arg Gly Leu Thr Leu Pro  
 20 25 30  
 Lys Thr Glu Leu Asp Ser Met Ser Lys Arg Lys Leu Thr Thr Lys Phe  
 35 40 45  
 Glu Glu Glu Pro Gln Lys Ile Ile Ser Ile Phe His Leu Thr Pro Ser  
 50 55 60  
 Val Phe Gln Ala Ile Leu Arg Ile Pro Tyr  
 65 70

<210> 6965  
 <211> 653  
 <212> PRT  
 <213> B.fragilis

<400> 6965  
 Ala Arg Asn Arg Leu Asp Arg Arg Val Cys Arg Gln Phe Asp Gly Phe  
 1 5 10 15  
 Gly Val Gln Met Gly Lys Gln Asp Ala Gln Cys Ser Glu Ser Val Ser  
 20 25 30  
 Arg Ser Ile Ser Pro Cys Arg Val Pro Cys Cys Lys Gln Gly Glu Leu  
 35 40 45  
 Phe Gly Val Cys Ile Lys Thr Lys Lys Tyr Arg Asn Met Tyr Leu Ser  
 50 55 60  
 Ser Leu His Ile Arg Gln Phe Arg Val Phe Asp Asp Ile Thr Leu Tyr  
 65 70 75 80  
 Phe Lys Asn Gly Ile Asn Ile Leu Ile Gly Glu Asn Asn Ser Gly Lys  
 85 90 95  
 Thr Ala Ile Ile Asp Ala Leu Arg Ile Cys Leu Gly Cys Gly Lys Pro  
 100 105 110  
 Asp Asn Tyr Ile Tyr Ile Gln Glu Ser Asp Leu His Val Asn Ser Thr  
 115 120 125  
 Val Pro Thr Glu Asn Asn Thr Thr Ile Gln Phe Asp Leu Thr Phe Glu  
 130 135 140  
 Phe Gly Asp Ala Leu Ile Glu Arg Glu Cys Phe Tyr Asp Phe Ile Ser  
 145 150 155 160  
 Gln Asp Lys Glu Asp Pro Ala Lys Gln Thr Ile Gln Leu His Leu Lys

																165																	170																	175
Phe	Ile	Gln	Glu	Asn	Asn	Gly	Lys	Lys	Lys	Tyr	Phe	Lys	Arg	Met	Ile																																			
																180																	185																	190
Trp	Gly	Gly	Asp	Asn	Glu	Gly	Gln	Gln	Val	Pro	Tyr	Glu	Ser	Leu	Gln																																			
																195																	200																	205
Glu	Ile	Phe	Tyr	Thr	Tyr	Leu	Ser	Pro	Leu	Arg	Asp	Ala	Val	Ser	Cys																																			
																210																	215																	220
Leu	Arg	Pro	Tyr	Ser	Tyr	Asp	Asn	Lys	Thr	Ser	Gln	Leu	Phe	Asn	Gln																																			
225																230																	235																	240
Leu	Thr	Lys	Tyr	Asn	Lys	Gly	Glu	Glu	Glu	Ile	Glu	Leu	Asn	Glu	Glu																																			
																245																	250																	255
Arg	Lys	Asp	Leu	Leu	Ala	Lys	Asn	Leu	Tyr	His	Val	Phe	Glu	Asp	Asp																																			
																260																	265																	270
Ala	Ser	Asp	Trp	Lys	His	Ile	Leu	Thr	Thr	Gly	Lys	Ser	Lys	Val	Asn																																			
																275																	280																	285
Ala	His	Leu	Glu	Gly	Thr	Gly	Ile	Thr	Arg	Lys	His	Pro	Asn	Ile	Glu																																			
																290																	295																	300
Met	Arg	Tyr	Val	Gly	Arg	Lys	Phe	Ser	Asp	Val	Val	Arg	Gly	Val	Glu																																			
305																310																	315																	320
Leu	Lys	Cys	Pro	Val	Tyr	Lys	Thr	Ile	Glu	Asp	Gly	Gln	Glu	Gln	Lys																																			
																325																	330																	335
Tyr	Phe	Glu	Leu	Tyr	Gln	Asn	Gly	Leu	Gly	Glu	Asn	Asn	Leu	Ile	Phe																																			
																340																	345																	350
Thr	Ser	Val	Val	Leu	Gly	Asp	Leu	Ile	Asn	Arg	Cys	Glu	Asp	Asn	Ala																																			
																355																	360																	365
Leu	Glu	Ile	Tyr	Asn	Ala	Leu	Leu	Val	Glu	Glu	Pro	Glu	Ala	His	Leu																																			
																370																	375																	380
His	Pro	Gln	Tyr	Gln	Asn	Thr	Phe	Phe	Glu	Tyr	Leu	Asn	Glu	Leu	Gln																																			
385																390																	395																	400
Ser	Lys	Gly	Leu	Gln	Val	Phe	Val	Thr	Ser	His	Ser	Pro	Thr	Ile	Thr																																			
																405																	410																	415
Ala	Lys	Ser	Asp	Val	Asn	Asn	Ile	Ser	Val	Leu	Gln	Arg	Lys	Gln	Asn																																			
																420																	425																	430
Ile	Val	Gln	Ser	Phe	Ser	Phe	Gly	Lys	Leu	Thr	Glu	Ser	Asp	Tyr	Pro																																			
																435																	440																	445
Ala	Glu	Ser	Lys	Arg	His	Leu	Arg	Lys	Phe	Leu	Asp	Thr	Thr	Lys	Ala																																			
																450																	455																	460
Gln	Leu	Phe	Phe	Ala	Asn	Gly	Val	Leu	Leu	Val	Glu	Gly	Val	Ala	Glu																																			
465																470																	475																	480
Ala	Ile	Ile	Ile	Pro	Ile	Leu	Ala	Lys	Lys	Phe	Leu	Ser	Glu	Lys	Ile																																			
																485																	490																	495
Asp	Leu	Cys	Lys	Ser	Gly	Ile	Glu	Leu	Val	Asn	Ile	Gly	Gly	Val	Ala																																			
																500																	505																	510
Phe	Asn	His	Phe	Gly	Leu	Leu	Phe	Asn	Asp	Asp	Glu	Ser	Lys	Arg																																				
																515																	520																	525
Leu	Leu	Ser	Lys	Cys	Ala	Ile	Ile	Thr	Asp	Ser	Asp	Pro	Glu	Glu	Asp																																			
																530																	535																	540
Lys	Asp	Lys	Ser	Asp	Arg	Ala	Gln	Lys	Ala	Lys	Asp	Leu	Glu	Gly	Gln																																			
545																550																	555																	560
Asn	Leu	Lys	Val	Cys	Leu	Ala	Pro	His																																										

Tyr Ile Lys Asp Ala Ile Leu Phe Val Ala Pro Ser Glu  
645 650

<210> 6966  
<211> 180  
<212> PRT  
<213> B.fragilis

<400> 6966  
Leu Phe Thr Ser Ser Ser Val Asn Leu Ile Glu Met Gln Glu Ile Ser  
1 5 10 15  
Phe Arg Asp Asp Ile Leu Pro Leu Lys Asp Lys Leu Phe Arg Leu Ala  
20 25 30  
Leu Arg Ile Thr Phe Asp Arg Ala Glu Ala Glu Asp Val Val Gln Asp  
35 40 45  
Thr Met Ile Arg Val Trp Asn Lys Arg Glu Glu Trp Thr Gln Phe Gly  
50 55 60  
Ser Ile Glu Ala Tyr Cys Leu Thr Val Ala Lys Asn Leu Ala Ile Asp  
65 70 75 80  
Arg Ser Gln Lys Lys Glu Ala Gln Asn Val Glu Leu Thr Pro Glu Met  
85 90 95  
Glu Glu Glu Ser Glu Ile Ser Gly Pro Tyr Asp Gln Leu Val Asn Asn  
100 105 110  
Glu Arg Met Ser Ile Ile His Arg Leu Ile Asn Glu Leu Pro Glu Lys  
115 120 125  
Gln Arg Leu Ile Met Gln Leu Arg Asp Ile Glu Gly Glu Ser Tyr Lys  
130 135 140  
Glu Ile Ala Lys Ile Leu Asn Leu Thr Glu Glu Gln Val Lys Val Asn  
145 150 155 160  
Leu Phe Arg Ala Arg Gln Lys Val Lys Gln Arg Tyr Leu Glu Ile Asp  
165 170 175  
Glu Tyr Gly Leu  
180

<210> 6967  
<211> 99  
<212> PRT  
<213> B.fragilis

<400> 6967  
Val Leu Val Arg Asn Val Phe Leu Ile Asp Arg Lys Asn Arg Leu Tyr  
1 5 10 15  
Leu Leu Cys Val Thr Lys Thr Thr Glu Tyr Met Lys Lys Phe Leu Lys  
20 25 30  
Ala Ile Gly Cys Phe Ala Ile Phe Val Leu Ala Val Phe Ser Tyr Phe  
35 40 45  
Arg Glu Gln Pro Tyr Lys Leu Asp Ser Leu Ser Leu Gln Asn Val Glu  
50 55 60  
Ala Leu Ala Glu Gly Glu Glu Tyr Thr His Ile Ser Cys Ile Gly Val  
65 70 75 80  
Gly Ser Leu Asp Cys Pro Val Asn His Ser Gly Val Lys Tyr Ile Phe  
85 90 95  
Lys Gly Tyr

<210> 6968  
<211> 198  
<212> PRT  
<213> B.fragilis



&lt;400&gt; 6968

```

Arg Thr Ser Ser Ala Leu Thr Met Arg Lys Tyr Ile Ala Ile Ile Ile
1          5          10          15
Ala Ser Leu Ala Leu Cys Thr Gly Gln Ala His Ala Gln Arg Cys Leu
          20          25          30
Pro Lys Met Gln Gly Ile Glu Val Arg Ala Asn Met Ala Asp Gly Phe
          35          40          45
Asn Pro Gly Gly Asn Asp Gly Tyr Ser Phe Gly Ala Ala Leu Ser
          50          55          60
Thr Tyr Thr Lys Lys Gly Asn Lys Trp Met Phe Gly Gly Glu Tyr Leu
65          70          75          80
Leu Lys Asn Asn Pro Tyr Lys Asp Gly Lys Ile Pro Val Ala Gln Phe
          85          90          95
Thr Ala Glu Gly Gly Tyr Tyr Phe Lys Ile Leu Ser Asp Ala Arg Lys
          100          105          110
Ile Val Phe Val Tyr Ala Gly Ala Ser Ala Leu Ala Gly Tyr Glu Ser
          115          120          125
Val Asn Trp Gly Glu Lys Val Leu His Asp Gly Ser Met Leu His Asp
          130          135          140
Arg Asp Ala Phe Ile Tyr Gly Gly Ala Leu Thr Leu Asp Val Glu Phe
145          150          155          160
Tyr Val Ala Asp Arg Ile Ala Leu Leu Ala Asn Leu Arg Glu Arg Cys
          165          170          175
Leu Trp Gly Gly Asp Thr Arg Lys Phe His Thr Gln Trp Gly Val Gly
          180          185          190
Ile Lys Phe Ile Ile Asn
          195

```

&lt;210&gt; 6969

&lt;211&gt; 272

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6969

```

Glu Ile Lys Ser Arg Lys Asp Trp Leu Tyr Gly Lys Tyr Cys Ile Asp
1          5          10          15
Leu Pro Gly Asn Ala His Tyr Asp Lys Phe Glu Leu Arg Gln Phe Ile
          20          25          30
Phe Ile Met Lys Cys Ile His Ile Thr Pro Val Lys Asp Ser Ile
          35          40          45
Glu Leu Thr Leu Gln Thr Ala Glu Ala Ile Leu Lys Ser Asp Phe Thr
          50          55          60
Val Pro Phe His Tyr Thr Ile Tyr Asn Asp Phe Ser Thr Asp Glu Asn
65          70          75          80
Thr Lys Gln Leu Lys Glu Ala Ser Leu Lys Met Gly Phe Glu Leu Val
          85          90          95
Asn Leu Ser Glu Ile Thr Ser His Pro Ser Pro Asn Tyr Leu Leu Val
          100          105          110
Leu Gln Met Ala Gln Glu Lys Ala Ile Ala Ala Glu Ala Gly Leu Leu
          115          120          125
Ile Val Glu Ser Asp Val Ile Val Lys Lys His Thr Leu Gln Ser Leu
          130          135          140
Phe Asp Gly Ala Gln Ala Arg Lys Asp Cys Gly Ile Ala Ala Ala Val
145          150          155          160
Thr Val Asp Glu His Glu Ala Ile Asn Tyr Pro Tyr Leu Tyr Ala Lys
          165          170          175
Gly Lys Glu Asn Gln Val Phe Pro Glu Lys Lys His Leu Ser Phe Cys
          180          185          190

```

Cys Ser Leu Leu Thr Thr Asp Phe Leu Arg Ala Phe Asp Phe His Ser  
 195 200 205  
 Leu Asn Pro Glu Lys Asn Trp Phe Asp Val Thr Ile Ser His Gln Ala  
 210 215 220  
 Leu Glu Lys Gly Phe Val Asn Tyr Leu Phe Thr Thr Leu Thr Val Trp  
 225 230 235 240  
 His Arg Pro His Ser Ser Arg Pro Trp Lys Gln Leu Lys Tyr Thr Asn  
 245 250 255  
 Pro Leu Lys Tyr Tyr Trp Leu Lys Phe Thr Lys Gly Leu Asp Lys Ile  
 260 265 270

&lt;210&gt; 6970

&lt;211&gt; 116

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6970

Ile Arg Lys Arg Ile Arg Lys Thr Gly Ser Pro His His Asp Gly Gly  
 1 5 10 15  
 Ser Met Leu Ala Gln Val Gln Ala Ser Val Glu Ile Leu Ser Pro Val  
 20 25 30  
 Pro Val Ser Gly Lys Cys Gly Glu Lys Asp Tyr Asp Gly Leu Phe Ile  
 35 40 45  
 Arg Glu Pro Glu Val Lys Ala Arg Glu Gly Lys Met Ala Tyr Val Arg  
 50 55 60  
 Pro Glu Tyr His Asp Arg Ile Met Arg Ile Thr Arg Val Ile Gly His  
 65 70 75 80  
 Asp Arg Leu Ser Leu Ser Ala Tyr Ile Asp His Val Leu Thr His His  
 85 90 95  
 Phe Asn Gln Cys Glu Glu Ala Ile Lys Ser Leu Tyr Ala Arg Asn Tyr  
 100 105 110  
 Asp Ala Val Phe  
 115

&lt;210&gt; 6971

&lt;211&gt; 627

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6971

Ala Gly Glu Ser Pro Val His Gly Glu Gly Lys Gln Leu Ile Ile Leu  
 1 5 10 15  
 Met Gln Ile Thr Glu Asn Val Arg Asp Ile Met Arg Ser Pro Glu Tyr  
 20 25 30  
 Val Leu Asn Ser Leu Thr Glu His Ser Glu Asn Leu Asn Tyr Lys Phe  
 35 40 45  
 Glu Arg Leu Tyr Arg Ile Phe Phe Asn Glu Glu Met Tyr Tyr Val Ala  
 50 55 60  
 Tyr Gln Arg Ile Tyr Ala Lys Pro Gly Asn Met Thr Ala Gly Ala Asp  
 65 70 75 80  
 Gly Lys Thr Ile Asp Gln Met Ser Leu Asn Arg Ile Glu Gln Leu Ile  
 85 90 95  
 Thr Ser Leu Lys Asp Glu Ser Tyr Gln Pro Gln Pro Ser Lys Arg Met  
 100 105 110  
 Tyr Ile Pro Lys Lys Asn Gly Lys Met Arg Pro Leu Gly Val Pro Ala  
 115 120 125  
 Phe Asn Asp Lys Leu Leu Gln Glu Val Val Arg Met Ile Leu Glu Ala  
 130 135 140  
 Ile Tyr Glu Arg Gln Phe Glu Lys Thr Ser His Gly Phe Arg Pro Leu

145					150					155				160
Arg	Ser	Cys	His	Thr	Ala	Leu	Ser	Asp	Ile	Gln	Lys	Thr	Phe	Ser
				165					170					175
Val	Lys	Trp	Phe	Val	Glu	Gly	Asp	Ile	Lys	Gly	Phe	Phe	Asp	Asn
			180					185					190	
Asn	His	Glu	Ile	Leu	Ile	Gly	Ile	Leu	Lys	Glu	Arg	Ile	Ala	Asp
		195					200					205		
Arg	Phe	Ile	Arg	Leu	Ile	Arg	Lys	Phe	Leu	Asn	Ala	Gly	Tyr	Ile
	210					215					220			
Asp	Trp	Asn	Phe	His	Asn	Ser	Tyr	Ser	Gly	Thr	Pro	Gln	Gly	Gly
225					230					235				240
Val	Ser	Pro	Ile	Leu	Ala	Asn	Ile	Tyr	Leu	Asp	Lys	Leu	Asp	Lys
			245						250				255	
Met	Lys	Glu	Tyr	Thr	Gly	Lys	Phe	Asp	Lys	Gly	Lys	Glu	Arg	Lys
			260					265					270	
Thr	Lys	Gln	Val	Val	Ser	Leu	Glu	Gly	Lys	Arg	His	Arg	Ile	Leu
		275					280					285		
Lys	Leu	Lys	Val	Val	Lys	Asp	Lys	Ser	Glu	Arg	Ser	Glu	Leu	Ile
	290					295					300			
Gln	Tyr	Lys	Ala	Tyr	Gln	Lys	Glu	Gly	Leu	Gln	Tyr	Ser	Asp	Gly
305					310					315				320
Glu	Met	Asp	Met	Asn	Tyr	Arg	Lys	Leu	Lys	Tyr	Val	Arg	Tyr	Ala
				325					330					335
Asp	Phe	Leu	Ile	Gly	Ile	Ile	Gly	Ser	Lys	Gln	Asp	Ala	Ile	Ile
			340				345					350		
Lys	Glu	Asp	Ile	Lys	Asn	Phe	Leu	Tyr	Glu	Lys	Leu	Ala	Leu	Thr
		355					360					365		
Ser	Asp	Glu	Lys	Thr	Leu	Ile	Thr	His	Ala	Glu	Asn	Ala	Ala	Lys
	370					375					380			
Leu	Gly	Tyr	Glu	Ile	Phe	Val	Arg	Lys	Ser	Asn	Asp	Thr	Lys	Arg
385					390					395				400
Lys	Tyr	Gly	Val	Leu	Arg	Arg	Val	Phe	Asn	Lys	Arg	Ile	Gln	Leu
			405						410				415	
Leu	Gly	Lys	Asp	Thr	Phe	Lys	Lys	Lys	Leu	Leu	Glu	Tyr	Arg	Val
			420					425					430	
Glu	Ile	Lys	Ile	His	Asn	Gly	Lys	Glu	Tyr	Trp	Lys	Ala	Lys	Ser
	435						440					445		
Pro	Lys	Leu	Ser	Asn	Asn	Asn	Asp	Phe	Glu	Ile	Leu	Asp	Arg	Tyr
	450					455					460			
Lys	Glu	Ile	Lys	Gly	Ile	Tyr	Asn	Tyr	Tyr	Cys	Leu	Ala	Asn	Asn
465					470					475				480
Ser	Ser	Leu	Ser	Lys	Leu	Gly	Tyr	Ile	Met	Lys	Tyr	Ser	Met	Tyr
			485						490				495	
Thr	Phe	Ala	Gln	Lys	Tyr	Arg	Thr	Thr	Met	Ser	Gln	Ile	Arg	Lys
			500					505					510	
Tyr	Thr	Lys	Asn	Gly	Leu	Phe	Ser	Val	Arg	Tyr	Tyr	Leu	Lys	Asn
	515						520					525		
Thr	Ala	Lys	Asp	Leu	Thr	Phe	Tyr	His	Gly	Gly	Phe	Lys	Lys	Lys
	530					535					540			
Pro	Met	Asn	Ile	Lys	Asp	Leu	Asp	Asn	Leu	Pro	Lys	Phe	Thr	Tyr
545					550					555				560
Pro	Thr	Asn	Thr	Ser	Leu	Ile	Asp	Arg	Leu	Lys	Ala	Glu	Lys	Cys
			565						570					575
Leu	Cys	Gly	Ala	Val	Asp	Lys	Leu	Val	Met	His	His	Val	Arg	Lys
			580					585					590	
Lys	Asn	Leu	Gln	Gly	Lys	Thr	Thr	Cys	Glu	Lys	Gln	Met	Met	Ala
	595						600					605		
Lys	Arg	Lys	Thr	Ile	Ala	Ile	Cys	Gly	Lys	Cys	Tyr	Lys	Lys	Leu
	610					615					620			

145 150 155 160  
 165 170 175  
 180 185 190  
 195 200 205  
 210 215 220  
 225 230 235 240  
 245 250 255  
 260 265 270  
 275 280 285  
 290 295 300  
 305 310 315 320  
 325 330 335  
 340 345 350  
 355 360 365  
 370 375 380  
 385 390 395 400  
 405 410 415  
 420 425 430  
 435 440 445  
 450 455 460  
 465 470 475 480  
 485 490 495  
 500 505 510  
 515 520 525  
 530 535 540  
 545 550 555 560  
 565 570 575  
 580 585 590  
 595 600 605  
 610 615 620

Asn Asn Glu  
625

<210> 6972  
<211> 160  
<212> PRT  
<213> B.fragilis

<400> 6972  
Val Leu Gly Arg Asn Gln Pro Tyr His Gln Thr Ser Met Ser Met Gly  
1 5 10 15  
Ser Arg Lys Val Asn Thr Glu Gly Ile Asp Glu Glu Leu Leu Ile Ala  
20 25 30  
Ser Ile Gly Arg Arg Lys Gln Asp Gly Thr Leu Tyr Arg Ala Gln Glu  
35 40 45  
Pro Pro Val Pro Ala Pro Glu Glu Glu Ser Val Pro Glu Thr Glu Pro  
50 55 60  
Pro Pro Thr Ala Ser Pro Ser Arg Glu Lys Val Gln Lys Asp Thr Ala  
65 70 75 80  
Arg Arg Lys Arg Gln Glu Asp Asp Tyr Ser Gly Leu Phe Leu Arg Arg  
85 90 95  
Asn Glu Ile Lys Thr Arg Gln Cys Val Tyr Ile Ser Arg Asp Val His  
100 105 110  
Ser Lys Ile Leu Lys Ile Val Asn Asp Ile Ala Gly Arg Glu Ile Ser  
115 120 125  
Val Gly Gly Tyr Val Asp Thr Val Leu Arg Gln His Leu Glu Gln His  
130 135 140  
Lys Glu Lys Ile Asn Glu Leu Tyr Lys Asn Gln Arg Glu Asp Leu Ile  
145 150 155 160

<210> 6973  
<211> 439  
<212> PRT  
<213> B.fragilis

<400> 6973  
Lys Phe Leu Gly Cys Phe Pro Phe Gly Glu His Glu Ser Arg Val Val  
1 5 10 15  
Val Pro Val Lys Gly Asn His Gly Ile Glu Ala Leu Ala Leu Ala  
20 25 30  
Leu Glu Ala Phe Glu Gln Phe Arg Val Ser Val Gly Glu Gln Val Phe  
35 40 45  
Asp Leu Val Ile Gly Glu Gly Thr Val Cys Leu Gln Ala Glu His Gly  
50 55 60  
Gln Pro Ala Leu Arg Val Val Ala Ala Asp Asp Leu Ala Val Lys Leu  
65 70 75 80  
His Thr Ser Arg Ser Ala Leu Gly Thr Leu Ala Ala Gly Ile Pro Ala  
85 90 95  
Gly Glu Gln Leu Val Ala Arg Glu Gln Phe Gly Gly Asn Phe Leu Arg  
100 105 110  
Val Arg Leu Tyr Leu Leu Ala Glu Gly Ile Gly Arg Gln Phe Pro Ala  
115 120 125  
Leu Asn Ala Cys Gln Leu Leu Phe Pro Phe Ala Arg His Gly Asn Val  
130 135 140  
Gly Asp Ala His Arg Leu His Asp Arg Val Glu Gly Lys Pro Leu Phe  
145 150 155 160  
Gly Arg Tyr Lys Arg Leu Leu Ala Ala Phe His Val Ser Pro Phe Glu  
165 170 175  
Lys Arg Phe Asp Asn Arg Cys Thr Gly Ser Arg Arg Ala Asn Ala Ala

Val	Leu	Gln	Ser	Leu	Thr	Gln	Arg	Ile	Val	Leu	Asn	Leu	Leu	Ala	Cys
	195						200				205				
Arg	Phe	His	Ser	Gly	Gln	Gln	Gly	Gly	Phe	Gly	Met	Gln	Arg	Phe	Arg
	210					215					220				
Leu	Gly	Leu	Ala	Leu	Cys	Asp	Gly	Gly	Ser	Phe	Gln	Cys	Gln	Arg	Val
	225				230					235					240
Ala	Phe	Leu	Pro	Ala	Gly	Asp	Asp	Gly	Phe	Leu	Phe	Leu	Phe	Leu	Ala
			245						250					255	
Ile	Asp	Gly	Thr	Pro	Pro	Gly	Leu	Phe	Asp	Asp	Ala	Ala	Phe	Cys	His
			260					265					270		
Glu	Leu	Arg	Ser	Gly	Thr	Leu	Arg	Arg	Asn	Ser	Gly	Gly	Val	Phe	Asp
		275					280					285			
Ala	Phe	Phe	Arg	Glu	Ser	Leu	Asn	His	Ala	Ser	Gly	Asn	His	Leu	Ile
	290					295					300				
Asp	Gly	Ile	Ile	Phe	Phe	Gly	Glu	Glu	Gln	Arg	Phe	Leu	Ala	Arg	Asp
	305				310					315					320
Glu	Gln	Gly	Val	Val	Val	Arg	Tyr	Leu	Ala	Thr	Val	His	Ala	Ala	Ala
			325						330					335	
Cys	Arg	His	Gly	Phe	Arg	Ile	Asp	Phe	Ala	Phe	Pro	Phe	Gly	Gln	Ala
			340					345					350		
Ala	Asp	Glu	Gly	Glu	Gln	Leu	Gly	Tyr	Phe	His	Glu	His	Val	Phe	Trp
		355					360						365		
Asp	Val	Ala	Ala	Ser	Cys	Ser	Trp	Ile	Gly	Asp	Glu	Phe	Leu	Leu	Val
	370					375					380				
Glu	Leu	Leu	Cys	Asp	Phe	Lys	Arg	Leu	Phe	Cys	Arg	Glu	Ala	Val	Leu
				390						395					400
Gly	Val	Gly	Phe	Leu	Leu	Glu	Arg	Gly	Gln	Val	Val	Gln	Lys	Arg	Ser
				405					410					415	
Val	Leu	Arg	Leu	Leu	Leu	Ala	Phe	Cys	Phe	Arg	Asp	Ser	Gly	Cys	Ala
			420					425					430		
Cys	Phe	Leu	Tyr	Leu	Ile	Val									
			435												

&lt;210&gt; 6974

&lt;211&gt; 179

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6974

Pro	Arg	Asn	Gly	Asp	Ala	Glu	Gln	Ser	Phe	Val	Ser	Thr	Phe	Leu	Thr
1				5					10					15	
Ile	Lys	Ser	Asn	Asp	Tyr	Gly	Asn	Thr	Asn	Asp	His	Gln	Arg	Ser	Lys
			20					25				30			
Tyr	Leu	His	Glu	Ser	Arg	Asp	Arg	Glu	Ile	Arg	Glu	Val	Pro	Asn	Gly
		35					40					45			
Tyr	Arg	Gln	Thr	Gln	Ala	Asp	Thr	Cys	Ala	Ile	Arg	Leu	Pro	Pro	His
		50				55					60				
Gly	Arg	Gly	Ile	Ile	Leu	Leu	Cys	Glu	Thr	His	Val	Gly	Arg	Val	Pro
	65				70					75					80
Asn	Arg	Thr	Gly	Gln	Val	Ala	Asp	Gly	Lys	Lys	Arg	Lys	Gly	Gly	Gln
				85					90					95	
Ala	Met	Asn	Glu	Ser	Gly	Tyr	Gln	Thr	Leu	Ile	Val	Lys	Phe	Ser	Lys
			100					105					110		
Pro	Ile	Thr	Glu	Leu	Asp	Gly	Ile	Phe	Asp	Asp	Ala	Glu	Ala	Trp	Gly
		115					120					125			
Val	Glu	Thr	Leu	Lys	Gly	Trp	Val	Glu	Asp	Tyr	Glu	Ser	Ser	Arg	Phe
	130					135					140				
Thr	Ala	Ile	Asp	Thr	His	Thr	Ala	Val	Ile	Thr	Ser	Glu	Tyr	Asn	Met

145 150 155 160  
 Glu Cys Val Lys Thr Trp Leu Glu Arg Asn Thr Pro Ile Ala Glu Lys  
 165 170 175  
 Thr Glu Phe

<210> 6975  
 <211> 152  
 <212> PRT  
 <213> B.fragilis

<400> 6975  
 His Pro His Gly Ser His Asn Glu Arg Val Gln Tyr Gly Val Cys Glu  
 1 5 10 15  
 Asn Met Val Gly Lys Glu His Pro His Ser Arg Glu Asn Arg Ile Leu  
 20 25 30  
 Asn Ile Arg Ala Val Ser Ala Pro Pro Glu His Ser Thr Gln Arg Arg  
 35 40 45  
 Met Asn Met Ile Ala Lys Thr Ile Leu Glu Gln Ile Gly Gly Arg Arg  
 50 55 60  
 Phe Ala Ala Met Thr Gly Ser Lys Asp Phe Ile Asp Met Gly Asn Gly  
 65 70 75 80  
 Leu Arg Met Ser Leu Ala Arg Asn Lys Thr Ser Ala Asn Arg Leu Asp  
 85 90 95  
 Ile Ile Tyr Asp Ala Gly Ala Asp Leu Tyr Asn Met Arg Phe Tyr Arg  
 100 105 110  
 Arg Thr Phe Ser Lys Lys Thr Phe Glu Cys Lys Thr Lys Asp Ile Glu  
 115 120 125  
 Thr His Glu Arg Ile Tyr Cys Asp Met Leu Glu Glu Met Phe Thr Met  
 130 135 140  
 Val Thr Gly Leu Tyr Thr Arg Phe  
 145 150

<210> 6976  
 <211> 430  
 <212> PRT  
 <213> B.fragilis

<400> 6976  
 Phe Arg Leu Met Lys Pro Arg Thr Gln Ile Gln Gln Glu Val Ala His  
 1 5 10 15  
 Leu Ser Lys Arg Leu Pro Arg Leu Thr Ala Thr Gln Lys Ala Tyr Ala  
 20 25 30  
 Phe Arg His Cys Phe Lys His Tyr Ala Ile Lys Arg Ala Asp Gly Thr  
 35 40 45  
 Asn Ile Cys Thr Glu Cys Gly His Ser Trp Lys Ser Asp His Asp Leu  
 50 55 60  
 Ala Asp Thr Ile Cys Gly Cys Thr Cys Pro His Cys Gly Met Gln Leu  
 65 70 75 80  
 Glu Ala Leu Arg Thr Arg Lys Ser Val Phe Ser Glu Asn Glu Tyr Phe  
 85 90 95  
 Ser Ile Val Thr Thr Ser Lys Gln Tyr Gln Val Ile Arg Phe Phe Phe  
 100 105 110  
 Val Lys Ser Arg Tyr Lys Ala Gly Gln Ala Ala Glu Tyr Ser Ile Tyr  
 115 120 125  
 Glu Val Val Gln Arg Trp Ile Ser Pro Asp Gly Lys Thr Thr Thr Val  
 130 135 140  
 Ala Arg Leu Arg Gly Met Ser Met Leu Tyr Tyr Asp Gln Trp Ser Glu  
 145 150 155 160

Tyr Ser Asp Met Glu Val Arg Lys Asn Asn Gly Leu His Ala Tyr Asp  
 165 170 175  
 Ile Thr Pro Met Cys Thr Tyr Pro Arg Gln Arg Phe Ile Pro Glu Leu  
 180 185 190  
 Lys Arg Asn Gly Phe Lys Gly Asp Tyr His Asn Thr Leu Pro Tyr Asp  
 195 200 205  
 Leu Phe Thr Ala Ile Leu Ser Asp Ser Arg Thr Glu Thr Leu Leu Lys  
 210 215 220  
 Ala Gly Gln Tyr Ala Met Leu Arg His Tyr Ile Arg Ser Ser Phe Asp  
 225 230 235 240  
 Met Gly Arg Tyr Trp Ala Ser Val Lys Ile Cys Ile Arg Asn Gly Tyr  
 245 250 255  
 Thr Ile Ser Asp Gly Ser Val Trp Cys Asp Thr Ile Asp Leu Leu Arg  
 260 265 270  
 His Phe Gly Lys Asp Thr Asn Ser Pro Lys Tyr Val Cys Pro Ala Asn  
 275 280 285  
 Leu Lys Ala Glu His Asp Lys Leu Val Ala Lys Arg Asn Leu Gln Arg  
 290 295 300  
 Glu Arg Glu Arg Thr Glu Gln Gln Arg Gln Lys Ala Ile Glu Asp Glu  
 305 310 315 320  
 Lys Asn Tyr Leu Lys Ala Lys Gly Ile Phe Phe Gly Leu Val Phe Ser  
 325 330 335  
 Asp Ser Leu Ile Cys Ile Lys Val Ile Glu Ser Val Lys Glu Met Glu  
 340 345 350  
 Glu Glu Gly Arg Ile Met His His Cys Val Gly Gly Tyr His Asn Lys  
 355 360 365  
 Ala Asn Ser Leu Ile Leu Ser Ala Thr Ile Asp Gly Lys Arg Ile Glu  
 370 375 380  
 Thr Ile Glu Val Ser Leu Lys Thr Leu Lys Val Val Gln Ser Arg Gly  
 385 390 395 400  
 Val Cys Asn Ser Asn Thr Glu Tyr His Asp Arg Ile Ile Arg Leu Val  
 405 410 415  
 Glu Asp Asn Ala Gly Leu Ile Arg Gln Arg Met Asn Ala Ala  
 420 425 430

&lt;210&gt; 6977

&lt;211&gt; 93

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6977

Tyr Gln Pro Ile Ile Lys Asn Asn Met Asp Val Arg Phe Glu Ser Met  
 1 5 10 15  
 Val Cys Leu Trp Asp Asp Lys Ile Pro Thr Met Phe Leu Glu Phe Met  
 20 25 30  
 Asn Leu Leu Thr Phe Cys Gln Ser Glu Glu Gln Leu Arg Ala Gly Val  
 35 40 45  
 Lys Asp Phe Ser Glu Lys His Glu Leu Asp Lys Phe Phe Leu Tyr Gly  
 50 55 60  
 Phe Gly Ser His His Phe Tyr Leu His Gln Arg Tyr Thr Ser Asn Pro  
 65 70 75 80  
 Glu Met Val Met Gln Asn Arg Val Leu Ser Val His Phe  
 85 90

&lt;210&gt; 6978

&lt;211&gt; 232

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6978

Lys Arg Leu Phe Met Tyr Ser Ile Leu Ile Ile Glu Asp Glu Gln Arg  
 1 5 10 15  
 Val Ala Asp Leu Leu Arg Ala Gly Leu Glu Glu Asn Gly Tyr Asn Cys  
 20 25 30  
 Leu Val Ala Tyr Asp Gly Ala Met Gly Leu Arg Met Phe Arg Ala Asn  
 35 40 45  
 Thr Phe Asp Leu Val Ile Ser Asp Ile Val Leu Pro Lys Met Asp Gly  
 50 55 60  
 Phe Glu Leu Cys Lys Glu Ile Arg Ala Ala Asn Pro Ala Ile Pro Ile  
 65 70 75 80  
 Leu Met Leu Thr Ala Leu Gly Ser Thr Asp Asp Lys Leu Asp Gly Phe  
 85 90 95  
 Asp Ala Gly Ala Asp Asp Tyr Met Val Lys Pro Phe Asp Phe Arg Glu  
 100 105 110  
 Leu Tyr Ala Arg Ile Arg Val Leu Leu Lys Arg Lys Leu Ala Val Val  
 115 120 125  
 Thr Asp Val Glu Glu Glu Leu Asn Tyr Ala Asp Leu Ser Val Asn Leu  
 130 135 140  
 Leu Asp Lys Ser Val Lys Arg Ala Gly Arg Asp Ile Lys Leu Ser Pro  
 145 150 155 160  
 Lys Glu Tyr Asn Leu Leu Val Tyr Met Ile Glu Asn Ala Glu Lys Val  
 165 170 175  
 Val Ser Arg Met Asp Ile Ala Asp Lys Val Trp Asn Thr His Phe Asp  
 180 185 190  
 Thr Gly Thr Asn Phe Ile Asp Val Tyr Ile Asn Tyr Leu Arg Lys Lys  
 195 200 205  
 Ile Asp Arg Asp Phe Asp Thr Lys Leu Ile His Thr Lys Thr Gly Met  
 210 215 220  
 Gly Phe Ile Leu Thr Asp Lys Leu  
 225 230

&lt;210&gt; 6979

&lt;211&gt; 367

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6979

Phe Cys Gly Met Met Glu Lys Asn Lys Arg Val Leu Leu Gly Met Ser  
 1 5 10 15  
 Gly Gly Thr Asp Ser Ser Val Ala Ala Met Leu Leu Leu Glu Ala Gly  
 20 25 30  
 Tyr Glu Val Thr Gly Val Thr Phe Arg Phe Tyr Glu Phe Asn Gly Ser  
 35 40 45  
 Thr Glu Tyr Leu Glu Asp Ala Arg Ala Leu Ala Ala Arg Leu Gly Ile  
 50 55 60  
 Gly His Ile Thr Tyr Asp Ala Arg Lys Val Phe Gln Glu Gln Ile Ile  
 65 70 75 80  
 Asp Tyr Phe Ile Asp Glu Tyr Met Ser Gly His Thr Pro Val Pro Cys  
 85 90 95  
 Thr Leu Cys Asn Asn Gln Leu Lys Trp Pro Leu Leu Ala Lys Ile Ala  
 100 105 110  
 Asp Glu Met Gly Ile Phe Tyr Leu Ala Thr Gly His Tyr Val Arg Lys  
 115 120 125  
 Gln Trp Val Asp Gly Asn Tyr Tyr Ile Ala Pro Ala Glu Asp Val Asp  
 130 135 140  
 Lys Asp Gln Ser Phe Phe Leu Trp Gly Leu Lys Gln Glu Ile Leu Gln  
 145 150 155 160  
 Arg Met Leu Leu Pro Met Gly Gly Met Thr Lys Ser Glu Ala Arg Ala



Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

<400> 6980

<210> 6981  
<211> 425

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6981

Phe	Asp	Phe	Ile	Ser	Met	Glu	Leu	Lys	Arg	Val	Val	Val	Thr	Gly	Leu
1				5					10					15	
Gly	Ala	Ile	Thr	Pro	Val	Gly	Asn	Asn	Val	Pro	Glu	Phe	Trp	Glu	Asn
			20					25					30		
Leu	Val	Asn	Gly	Val	Ser	Gly	Ala	Gly	Pro	Ile	Thr	His	Phe	Asp	Ala
		35					40					45			
Ser	Gln	Phe	Lys	Thr	Gln	Phe	Ala	Cys	Glu	Val	Lys	Gly	Phe	Asp	Ala
	50					55					60				
Thr	Gln	Tyr	Ile	Asp	Arg	Lys	Glu	Ala	Arg	Lys	Met	Asp	Leu	Tyr	Thr
65					70					75				80	
Gln	Tyr	Ala	Val	Ala	Val	Ala	Lys	Glu	Ala	Val	Ala	Asp	Ser	Gly	Leu
				85					90					95	
Asp	Ile	Glu	Asn	Glu	Asp	Leu	Asn	Arg	Ile	Gly	Val	Ile	Phe	Gly	Ala
			100					105					110		
Gly	Ile	Gly	Gly	Ile	Arg	Thr	Phe	Glu	Glu	Glu	Thr	Ser	Asn	Tyr	Ala
		115					120					125			
Leu	His	Lys	Glu	Asn	Gly	Pro	Lys	Tyr	Asn	Pro	Phe	Phe	Ile	Pro	Lys
	130					135					140				
Met	Ile	Ser	Asp	Ile	Ala	Ala	Gly	Gln	Ile	Ser	Ile	Met	Tyr	Gly	Phe
145					150					155				160	
His	Gly	Pro	Asn	Tyr	Ala	Thr	Cys	Ser	Ala	Cys	Ala	Thr	Ser	Thr	Asn
				165					170					175	
Ala	Ile	Ala	Asp	Ala	Phe	Asn	Leu	Ile	Arg	Leu	Gly	Lys	Ala	Asn	Val
			180					185					190		
Ile	Val	Ser	Gly	Gly	Ser	Glu	Ala	Ala	Ile	Ala	Ala	Ala	Gly	Val	Gly
		195					200					205			
Gly	Phe	Asn	Ala	Met	His	Ala	Leu	Ser	Thr	Arg	Asn	Asp	Glu	Pro	Gln
	210					215					220				
Ser	Ala	Ser	Arg	Pro	Phe	Ser	Ala	Ser	Arg	Asp	Gly	Phe	Val	Met	Gly
225					230					235				240	
Glu	Gly	Gly	Gly	Cys	Leu	Ile	Leu	Glu	Glu	Leu	Glu	His	Ala	Lys	Ala
				245					250					255	
Arg	Gly	Ala	Lys	Ile	Tyr	Ala	Glu	Val	Ala	Gly	Val	Gly	Met	Ser	Ala
			260					265					270		
Asp	Ala	His	His	Leu	Thr	Ala	Ser	His	Pro	Glu	Gly	Leu	Gly	Ala	Lys
		275					280					285			
Leu	Val	Met	Lys	Asn	Ala	Leu	Glu	Asp	Ala	Glu	Met	Ser	Pro	Glu	Glu
	290					295					300				
Val	Asp	Tyr	Ile	Asn	Val	His	Gly	Thr	Ser	Thr	Pro	Val	Gly	Asp	Ile
305					310					315				320	
Ser	Glu	Ala	Lys	Ala	Ile	Lys	Glu	Val	Phe	Gly	Glu	His	Ala	Phe	Glu
				325					330					335	
Leu	Asn	Ile	Ser	Ser	Thr	Lys	Ser	Met	Thr	Gly	His	Leu	Leu	Gly	Ala
			340					345					350		
Ala	Gly	Ala	Val	Glu	Ser	Ile	Ala	Ser	Ile	Leu	Ala	Ile	Lys	Asn	Gly
		355					360					365			
Ile	Val	Pro	Pro	Thr	Ile	Asn	His	Ala	Glu	Gly	Asp	Asn	Asp	Glu	Asn
	370					375					380				
Ile	Asp	Tyr	Asn	Leu	Asn	Phe	Thr	Phe	Asn	Lys	Ala	Gln	Lys	Arg	Glu
385					390					395				400	
Ile	Asn	Val	Ala	Leu	Ser	Asn	Thr	Phe	Gly	Phe	Gly	Gly	His	Asn	Ala
				405					410					415	
Cys	Val	Ile	Phe	Lys	Lys	Tyr	Ala	Glu							
			420					425							

[illegible][illegible]

<400> 6983

Phe 1	Asn	Leu	Ile	Asp 5	Leu	Ile	Met	Asn	Val 10	Asp	Cys	Val	Ile	Val 15	Thr
Tyr	Asn	Arg	Leu 20	Ser	Leu	Leu	Lys	Glu 25	Cys	Ile	Thr	Ala	Val 30	Lys	Gly
Gln	Ser	Tyr 35	Pro	Ala	Arg	Lys	Ile 40	Tyr	Val	Ile	Asp	Asn 45	Asn	Ser	Thr
Asp	Gly 50	Thr	Leu	Glu	Phe	Leu 55	Glu	Lys	Phe	Ser	Gln 60	Asp	Ser	Gln	Val
Lys 65	Val	Ile	Asn	Leu 70	Thr	Glu	Asn	Ile	Gly 75	Gly	Ala	Gly	Gly	Phe	Ser 80
Arg	Gly	Ile	Lys	Glu 85	Ala	Val	Met	Ala	Gly 90	Ala	Asp	Trp	Val	Trp	Val
Met	Asp	Asp 100	Thr	Ile	Pro	Tyr	Ser 105	Asp	Ala	Leu	Glu 110	Lys	Met	Leu	
Lys	Thr	Ile 115	Asp	Leu	Thr	Lys	Asn 120	Val	Gly	Tyr	Val 125	Cys	Ser	Lys	Val
Leu	Trp 130	Thr	Asp	Glu	Thr	Pro 135	His	Arg	Met	Asn 140	Met	Pro	Gly	Tyr	Ser
Ile 145	Gly	Thr	Gln	Lys 150	Gly	Val	Leu	Tyr	Asn 155	Ala	Phe	Ser	Asn	Arg	Asp 160
Thr	Pro	Ala	Phe 165	Leu	Ile	His	His	Ala	Ser 170	Phe	Val	Ser	Leu	Leu	Val
Asn	Ala	Lys 180	Ala	Val	Lys	Ser	Ala 185	Gly	Leu	Pro	Ile 190	Ser	Glu	Phe	Phe
Ile	Trp 195	Gly	Asp	Asp	Ile	Glu	Tyr 200	Thr	Met	Arg	Ile 205	Ser	Ser	Leu	Gly
Tyr	Ile 210	Gly	Phe	Tyr	Val	Asp 215	Asn	Ser	Ile	Val	Leu 220	His	Lys	Thr	Pro
Thr 225	Asn	Tyr	Gln	Pro 230	Tyr	Pro	Asp	Thr	Ala 235	Pro	Thr	Asn	Thr	Ala	Trp 240
Lys	Phe	Tyr	Tyr 245	Gln	Ala	Arg	Asn	Thr 250	Ala	Tyr	Leu	Lys	Arg	Arg	Lys
Thr	Lys	Asn	Arg 260	Leu	Cys	Phe	Leu 265	Leu	Ser	Ile	Ile 270	Asn	Lys	Tyr	Arg

Val Tyr Ile His Arg Ile Asn Lys Arg Lys Thr Asn Asp Lys Leu Ile  
 275 280 285  
 Phe Lys Lys Tyr Val Arg Lys Gly Cys Trp Asp Gly Leu Thr Phe Asn  
 290 295 300  
 Pro Gln Ile Glu Tyr Leu Pro  
 305 310

<210> 6984  
 <211> 63  
 <212> PRT  
 <213> B.fragilis

<400> 6984  
 Ile Leu Ser Phe Leu Gln Val Ser Val Gly Trp Gln Leu His Phe Phe  
 1 5 10 15  
 Ser Phe Trp Ala Ala Leu Ile Lys Ile Tyr Ser Tyr Phe Arg Leu Tyr  
 20 25 30  
 Thr Phe Met Ser Ile Tyr Val Lys Asn Pro Ala Asp Leu Val Tyr Val  
 35 40 45  
 Leu Ser Val Thr Ile Cys Lys Thr Ile Phe Asp Pro Gln Arg Gly  
 50 55 60

<210> 6985  
 <211> 162  
 <212> PRT  
 <213> B.fragilis

<400> 6985  
 Arg Asn Lys Ile Met Lys Ser Val Leu Leu Met Cys Trp Met Ala Leu  
 1 5 10 15  
 Leu Ser Val Ala Val Ser Ala Gln Asp Phe Asp Ser Arg Phe Met Ala  
 20 25 30  
 Glu His Gln Ala Asp Ser Asn Leu Thr Cys Val Thr Ile Ser Pro Lys  
 35 40 45  
 Met Met Glu Glu Ile Met Lys Ser Asp Ala Glu Lys Asp Lys Glu Val  
 50 55 60  
 Leu Asp Met Ile Ser Asn Leu Lys Ser Met Gln Val Leu Thr Ser Asp  
 65 70 75 80  
 Val Glu Gly Lys Lys Tyr Phe Asn Ala Ala Leu Lys Val Val Glu Lys  
 85 90 95  
 Asn Ser Gly Arg Phe Glu Ser Phe Leu Ser Phe Lys Asp Lys Ser Glu  
 100 105 110  
 Asn Cys Gln Ile Met Val Arg Lys Lys Lys Ser Thr Ile Val Glu Leu  
 115 120 125  
 Val Met Leu Met His Glu Lys Asn His Phe Ala Val Val Asn Phe Thr  
 130 135 140  
 Gly Asn Met Ser Pro Glu Phe Ile Ala Gln Ile Lys Arg His Phe His  
 145 150 155 160  
 Leu Leu

<210> 6986  
 <211> 456  
 <212> PRT  
 <213> B.fragilis

<400> 6986  
 Val Met Lys Ile Arg Ser Ile Leu Thr Ile Lys Tyr Ala Gly Ile Thr  
 1 5 10 15

Ala	Thr	Ile	Phe	Leu	Val	Phe	Met	Ala	Thr	Ile	Tyr	Cys	Val	Asn	Glu
			20					25					30		
His	Leu	Arg	Ser	Asp	Ser	Phe	Tyr	Arg	Ser	Leu	Arg	Ser	Glu	Ala	Ile
		35					40					45			
Thr	Lys	Ala	His	Leu	Phe	Leu	Asn	Asn	Gln	Val	Asp	Val	Glu	Thr	Met
	50					55					60				
Gln	Ser	Ile	Tyr	Leu	Asn	Asn	Arg	Gln	Phe	Ile	Asp	Glu	Val	Glu	Val
65					70				75					80	
Ala	Val	Tyr	Thr	Pro	Asp	Phe	Arg	Ile	Leu	Tyr	His	Asp	Ala	Leu	His
			85					90						95	
Asn	Asp	Ile	Ile	Lys	Glu	Thr	Pro	Gly	Met	Ile	Asp	Glu	Ile	Val	Arg
			100					105					110		
Lys	Lys	Glu	Ile	Asp	Phe	Arg	Thr	Gly	Asp	Tyr	Gln	Gly	Ile	Gly	Ile
		115					120					125			
Leu	Tyr	Glu	Phe	Gly	Gly	Lys	Asn	Tyr	Val	Val	Thr	Ala	Ala	Ala	Tyr
	130					135					140				
Asp	Arg	Tyr	Gly	His	Ile	Asn	Gln	Val	Ile	Met	Thr	Arg	Leu	Leu	Leu
145					150					155					160
Leu	Leu	Ser	Ile	Gly	Gly	Leu	Ser	Val	Leu	Val	Ile	Val	Gly	Tyr	Met
			165					170						175	
Leu	Ala	Lys	Ser	Ser	Leu	Ala	Pro	Ile	Arg	Ser	Ile	Val	Arg	Lys	Ala
		180						185					190		
Glu	Gly	Ile	Thr	Val	Thr	Gln	Ile	Asp	Glu	Arg	Leu	Pro	Val	Lys	Asn
	195						200					205			
Glu	His	Asp	Glu	Leu	Gly	Glu	Leu	Ala	Leu	Ala	Phe	Asn	Ala	Leu	Leu
	210					215					220				
Asp	Arg	Val	Glu	Lys	Thr	Phe	Asn	Asp	Gln	Arg	Met	Phe	Val	Ser	Asn
225					230					235					240
Val	Ser	His	Glu	Leu	Arg	Thr	Pro	Met	Ala	Ala	Leu	Ser	Ala	Glu	Leu
			245					250						255	
Asp	Leu	Ala	Leu	Gln	Lys	Glu	Arg	Thr	Val	Thr	Gln	Tyr	Gln	Asn	Ser
		260						265					270		
Ile	His	Asn	Ala	Leu	Gln	Asp	Ser	Gln	Arg	Val	Ile	Glu	Leu	Ile	Asp
	275						280					285			
Gly	Leu	Leu	Asn	Leu	Ala	Lys	Ala	Asp	Tyr	Tyr	Pro	Glu	Gln	Ile	Lys
	290					295					300				
Lys	Glu	Glu	Ile	Arg	Leu	Asp	Glu	Leu	Leu	Leu	Asp	Ala	Asn	Glu	Leu
305					310					315					320
Val	Leu	Lys	Ala	His	Pro	Asp	Tyr	His	Ile	Glu	Leu	Ile	Phe	Glu	Gln
			325					330						335	
Glu	Ala	Asp	Asp	Asp	Arg	Val	Leu	Thr	Val	Ile	Gly	Asn	Pro	Tyr	Leu
		340						345					350		
Leu	Thr	Thr	Ala	Phe	Val	Asn	Leu	Ile	Glu	Asn	Asn	Cys	Lys	Tyr	Ser
		355					360					365			
Asp	Asn	Arg	Thr	Ser	Phe	Ile	Gln	Ile	Ser	Phe	Cys	Asp	Gln	Trp	Thr
	370					375					380				
Ile	Val	Ser	Leu	Ser	Asp	Asn	Gly	Ala	Gly	Met	Ser	Glu	Thr	Asp	Lys
385					390					395					400
Glu	Asn	Leu	Phe	Lys	Leu	Phe	Tyr	Arg	Gly	Glu	Asn	Lys	Asn	Gln	Ala
			405						410					415	
Gln	Gly	His	Gly	Ile	Gly	Met	Thr	Leu	Thr	Lys	Lys	Ile	Leu	Thr	Leu
		420						425					430		
His	Lys	Ser	Glu	Ile	Ser	Val	Tyr	Ser	His	Gln	Gly	Glu	Gly	Thr	Thr
		435					440					445			
Phe	Val	Val	Arg	Phe	His	His	Leu								
	450					455									

&lt;210&gt; 6987

&lt;211&gt; 887

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6987

```

Ser Ala Lys Ile Met Ile Trp Arg Lys Lys Glu Lys Lys Lys Ala Gln
1      5      10      15
Tyr Gln Phe Asn Ser Glu Arg Val Phe Leu Val Ala Thr Gln Pro Ala
20     25     30
Lys Thr Ala Tyr Ser Tyr Phe Gln Thr Ser Ser Val Gly Leu Ser Glu
35     40     45
Glu Glu Ile Gly Gln Arg Gln Ser Ala Tyr Gly Lys Asn Glu Ile Ser
50     55     60
Arg Glu Gln Lys Lys Asn Pro Leu Val Leu Phe Ile Arg Thr Phe Ile
65     70     75     80
Asn Pro Phe Ile Gly Val Leu Thr Ala Leu Ala Val Ile Ser Leu Val
85     90     95
Ile Asp Val Val Met Ala Arg Pro Glu Asp Arg Glu Trp Thr Ala Val
100    105    110
Leu Ile Ile Ile Ser Met Val Val Cys Ser Ala Ile Leu Arg Phe Trp
115    120    125
Gln Glu Trp Lys Ala Ser Glu Ala Thr Asp Ser Leu Met Lys Met Val
130    135    140
Lys Asn Thr Cys Phe Val Lys Arg Phe Ser Gly Ser Glu Glu Val Asp
145    150    155    160
Ile Thr Glu Leu Val Pro Gly Asp Val Val Cys Leu Ala Ala Gly Asp
165    170    175
Met Ile Pro Ala Asp Ile Arg Ile Ile Glu Ser Lys Asp Leu Phe Val
180    185    190
Ser Gln Ala Ser Leu Thr Gly Glu Ser Asp Pro Val Glu Lys Phe Pro
195    200    205
Glu Ile Asn Gly Arg Arg His Ser His Gly Ser Val Ile Glu Leu Asp
210    215    220
Asn Ile Cys Tyr Met Gly Ser Thr Val Ile Ser Gly Ser Ala Lys Gly
225    230    235    240
Ile Val Phe Gly Thr Gly Asn Asp Thr Tyr Leu Gly Thr Ile Ala Arg
245    250    255
Ser Leu Val Gly Glu Arg Ala Thr Thr Ala Phe Asp Lys Gly Ile Ser
260    265    270
Lys Val Ser Phe Leu Leu Ile Arg Phe Met Leu Val Met Val Pro Phe
275    280    285
Val Phe Phe Val Asn Gly Phe Thr Lys Gly Asp Trp Phe Glu Ala Phe
290    295    300
Ile Phe Ala Leu Ser Val Ala Val Gly Leu Thr Pro Glu Met Leu Pro
305    310    315    320
Met Ile Val Thr Ala Asn Leu Ser Lys Gly Ala Val Ser Met Ser Lys
325    330    335
Lys Lys Thr Val Val Lys Asn Leu Asn Ala Ile Gln Asn Phe Gly Ala
340    345    350
Met Asn Ile Leu Cys Thr Asp Lys Thr Gly Thr Leu Thr Cys Asp Lys
355    360    365
Ile Val Leu Glu Lys Tyr Ile Asn Ala Asp Gly Ser Asp Asp His Ser
370    375    380
Arg Arg Ile Leu Arg His Ala Phe Leu Asn Ser Tyr Phe Gln Thr Gly
385    390    395    400
Leu Lys Asn Leu Met Asp Lys Ala Ile Leu Ala His Val Arg Glu Glu
405    410    415
Asn Leu Glu His Leu Thr Glu Gly Tyr Thr Lys Ile Asp Glu Ile Pro
420    425    430
Phe Asp Phe Ser Arg Arg Arg Met Ser Val Val Ile Glu Asp Gln Gln

```

435	440	445
Gly Lys Arg Gln Ile Ile Thr	Lys Gly Ala Val Glu Glu Met Leu Asn	
450	455	460
Ile Cys Ser His Ala Glu Phe Asn Gly Gln Val Tyr Glu Leu Thr Asp		
465	470	475
Lys Leu Arg Ser Lys Ala Lys Arg Ile Ser Asp Asp Met Asn Arg Asn		
485	490	495
Gly Met Arg Val Leu Ala Ile Ala Gln Lys Ser Phe Ile Ser Lys Ala		
500	505	510
Arg Asp Phe Ala Val Thr Asp Glu Asp Glu Met Val Leu Ile Gly Tyr		
515	520	525
Leu Ala Phe Leu Asp Pro Pro Lys Pro Ser Ser Ala Glu Ala Ile Arg		
530	535	540
Gln Leu Arg Glu Tyr Gly Ile Glu Val Lys Ile Leu Ser Gly Asp Asn		
545	550	555
Asp Val Ile Val Ser Ala Ile Ala Arg Gln Ile Gly Ile Asp Thr Cys		
565	570	575
His Ser Val Thr Gly Val Glu Leu Glu Gly Lys Asp Gly Glu Glu Leu		
580	585	590
Arg Glu Ile Val Gly Gln Ala Thr Leu Phe Ser Arg Leu Thr Pro Leu		
595	600	605
Gln Lys Ser Glu Ile Ile Met Ile Leu Gln Gln Asn Gly Asn Thr Val		
610	615	620
Gly Phe Leu Gly Asp Gly Val Asn Asp Ala Gly Ala Leu Arg Gln Ser		
625	630	635
Asp Ile Gly Ile Ser Val Asp Ser Ala Val Asp Ile Ala Lys Glu Ser		
645	650	655
Ala Asp Ile Ile Leu Leu Asp Lys Asp Leu Ser Val Leu Lys Glu Gly		
660	665	670
Val Leu Glu Gly Arg Lys Thr Phe Gly Asn Ile Thr Lys Tyr Ile Lys		
675	680	685
Met Thr Ala Ser Ser Asn Phe Gly Asn Met Phe Ser Val Met Phe Ala		
690	695	700
Ser Ala Phe Leu Pro Phe Leu Pro Met Leu Pro Ile His Leu Leu Ile		
705	710	715
Gln Asn Leu Leu Tyr Asp Ile Ser Gln Thr Thr Ile Pro Phe Asp Arg		
725	730	735
Met Asp Ala Glu Phe Leu Lys Gln Pro Gln Lys Trp Asp Ala Ser Asp		
740	745	750
Leu Ser Arg Phe Met Ile Tyr Ile Gly Pro Ile Ser Ser Val Phe Asp		
755	760	765
Ile Ala Thr Tyr Cys Leu Met Trp Tyr Val Phe Ala Cys Asn Ser Pro		
770	775	780
Glu His Gln Thr Leu Phe Gln Ser Gly Trp Phe Val Glu Gly Leu Leu		
785	790	795
Ser Gln Thr Leu Ile Val His Met Ile Arg Thr Arg Lys Ile Pro Phe		
805	810	815
Phe Gln Ser Arg Ala Thr Trp Pro Val Leu Gly Leu Thr Phe Leu Ile		
820	825	830
Met Ala Met Gly Ile Ala Ile Pro Phe Thr Ser Phe Gly Leu Ser Ile		
835	840	845
Gly Leu Glu Pro Leu Pro Leu Ser Tyr Phe Pro Trp Leu Val Leu Ile		
850	855	860
Leu Val Ser Tyr Cys Val Leu Thr Gln Phe Met Lys Ser Trp Tyr Ile		
865	870	875
Arg Arg Phe Ser Lys Trp Leu		
885		

&lt;210&gt; 6988

Leu	Tyr	Gly	Val	Phe	His	Leu	Leu	Gln	Phe	Arg	Phe	Lys	Val	Met	Leu
1				5					10					15	
Ala	Leu	Leu	Gln	Thr	Phe	Gln	His	Arg	Pro	Arg	Tyr	Val	Leu	Ser	Leu
			20					25					30		
Leu	Ala	Gln	His	Phe	Glu	Val	Phe	Leu	His	Arg	Val	Lys	Leu	Arg	Leu
		35					40				45				
Gln	Asp	Ala	Leu	Leu	Gln	Leu	Arg	Arg	Leu	Arg	Tyr	Leu	Ala	Glu	Leu
	50					55					60				
Val	Val	Arg	His	Asn	Asp	Thr	Ile	Val	Val	Val	Val	Leu	Asp	Val	Val
65				70					75						80
Glu	Glu	Thr	His	Ala	Val	Gly	Gly	Arg	Lys	Val	Phe	Leu	Arg	Ser	Val
			85					90					95		
Gln	Asn	Pro	Arg	Val	Gly	Ile	Cys	Arg	Leu	Ile	Gly	Gly	Gly	Asn	Leu
			100					105					110		
Arg	Asn	Ile	Gly	Phe	Gln	Pro	Asp	Asn	His	Arg	Leu	Val	Arg	Gln	Val
		115					120					125			
Gln	Thr	Leu	His	Phe	Met	Arg	Gly	Asp	Ala	His	Tyr	Gln	Arg	Leu	Ala
		130				135					140				
Gly	Ser	Asn	Leu	Val	Val	Thr	Asn	Ser	Ala	Ala	Val	Leu	Phe	Gln	His
145				150					155					160	
Pro	Asp	Ala	Ile	His	Leu	Arg	Gly	Ile	Asp	Ala	Pro	Asp	Ala	Pro	Ala
			165						170					175	
Cys	Gln	Pro	Phe	Gln	Ile	Glu	Val	Gly	Lys	Ser	Leu	Met	Arg	Ala	Val
			180					185					190		



Ile Leu Arg Ala His Glu Thr Val Glu Leu Ala Val Ile His Arg Arg  
 195 200 205  
 Gln Pro Leu Leu Glu Leu Trp Arg Leu Leu Phe Glu Pro Phe Gly Glu  
 210 215 220  
 Ala Val Ser Tyr Leu Val Asn Leu Gly Val Gly Glu Leu Tyr Ser Leu  
 225 230 235 240  
 Ala Val Ala His Leu Asp Val Val Ala Met Leu Val Pro Ala Asp Gly  
 245 250 255  
 Leu His His Val Gly Thr Gly Val Val Gln Gly Val Phe Gln Lys Val  
 260 265 270  
 His Ala Val Ile Val Thr Val Ile Pro Leu His Gln Lys Leu Val Arg  
 275 280 285  
 Asp Phe His Gly Ala Val Ala Ala Arg His Arg Lys Leu Val His Ala  
 290 295 300  
 Cys Arg Val Gly Asp Phe His Leu Arg Val Glu Gln Pro Ala His Val  
 305 310 315 320  
 Gly Gly Ile Asp Thr Arg Arg Asn Pro Ala Phe Pro Glu Ile Glu Ile  
 325 330 335  
 Lys Val Phe Lys Ser Asp Ala Arg Arg Phe Gly Ile Phe Gln Ser Leu  
 340 345 350  
 Gln Arg Leu Leu His Leu Arg His Thr Phe Thr Phe Gly Val Phe Ala  
 355 360 365  
 His Pro Ser Leu Tyr Ala Phe Arg Phe Leu Tyr His Val Ser Gly Asn  
 370 375 380  
 Lys Ala Val Leu Asn Leu Val Thr Gly Tyr Glu Arg Ile Val Ile Asp  
 385 390 395 400  
 Ala Pro Leu Gln Gly Cys Glu Gln Ile Leu Arg Arg Thr Val Gly Tyr  
 405 410 415  
 Leu Pro His Ile Val Glu Ile Asp Ser Ala Glu Leu Val Glu Arg Arg  
 420 425 430  
 Gly Gln Cys Phe Phe Gly  
 435

<210> 6991  
 <211> 126  
 <212> PRT  
 <213> B.fragilis

<400> 6991  
 Ser Asn Gln Val Ser Thr Ala Arg Lys Arg Thr Ile His Pro Phe Asn  
 1 5 10 15  
 Gly Thr Lys Gln Glu Gln Phe Met Asn Lys Asn Ile Arg Gln Lys Leu  
 20 25 30  
 Ile Ile Ser Ala Ala Leu Met Ile Ala Ala Thr Ala Ser Ala Phe Ala  
 35 40 45  
 Gln Gly Asn Gly Leu Ala Gly Ile Asn Glu Ala Thr Ser Met Val Ser  
 50 55 60  
 Ser Tyr Phe Asp Pro Gly Thr Lys Leu Ile Tyr Ala Ile Gly Ala Val  
 65 70 75 80  
 Val Gly Leu Ile Gly Gly Val Lys Val Tyr Gly Lys Phe Ser Ser Gly  
 85 90 95  
 Asp Pro Asp Thr Ser Lys Thr Ala Ala Ser Trp Phe Gly Ala Cys Ile  
 100 105 110  
 Phe Leu Ile Val Ala Ala Thr Ile Leu Arg Ser Phe Phe Leu  
 115 120 125

<210> 6992  
 <211> 82  
 <212> PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6992

Lys Leu Lys Val Met Ser Glu Ile Ala Ser Arg Val Lys Ala Ile Ile  
 1 5 10 15  
 Val Asp Lys Leu Gly Val Glu Glu Ser Glu Val Thr Glu Thr Ala Ser  
 20 25 30  
 Phe Thr Asn Asp Leu Gly Ala Asp Ser Leu Asp Thr Val Glu Leu Ile  
 35 40 45  
 Met Glu Phe Glu Lys Glu Phe Gly Ile Ser Ile Pro Asp Asp Gln Ala  
 50 55 60  
 Glu Lys Ile Gly Thr Val Gln Asp Ala Val Ala Tyr Ile Glu Glu His  
 65 70 75 80  
 Ala Lys

&lt;210&gt; 6993

&lt;211&gt; 351

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6993

Leu Phe Ser Phe Lys Tyr Val Ile Phe Asn Lys Lys Arg Ala Ala Met  
 1 5 10 15  
 Lys Ile Gly Ile Leu Thr Ser Gly Gly Asp Cys Pro Gly Ile Asn Ala  
 20 25 30  
 Thr Ile Arg Gly Val Cys Lys Thr Ala Ile Asn His Tyr Gly Met Glu  
 35 40 45  
 Val Val Gly Ile His Ser Gly Phe Gln Gly Leu Leu Thr Lys Glu Val  
 50 55 60  
 Glu Ser Phe Thr Glu Lys Ser Leu Ser Gly Leu Leu Asn Leu Gly Gly  
 65 70 75 80  
 Thr Met Leu Gly Thr Ser Arg Glu Lys Pro Phe Arg Lys Gln Gly Ile  
 85 90 95  
 Ile Ser Asp Val Asp Lys Pro Ala Leu Ile Gln Arg Asn Ile Ala Glu  
 100 105 110  
 Leu Gly Leu Asp Cys Val Val Cys Ile Gly Gly Asn Gly Thr Gln Lys  
 115 120 125  
 Thr Ala Ala Lys Phe Ala Ala Met Gly Ile Asn Ile Val Ser Val Pro  
 130 135 140  
 Lys Thr Ile Asp Asn Asp Ile Trp Gly Thr Asp Ile Ser Phe Gly Phe  
 145 150 155 160  
 Asp Ser Ala Val Ser Ile Ala Thr Asp Ala Ile Asp Arg Leu His Ser  
 165 170 175  
 Thr Ala Ser Ser His Lys Arg Val Met Val Ile Glu Val Met Gly His  
 180 185 190  
 Lys Ala Gly Trp Ile Ala Leu Tyr Ser Gly Met Ala Gly Gly Gly Asp  
 195 200 205  
 Val Ile Leu Val Pro Glu Ile Pro Tyr Asn Ile Lys Asn Ile Gly Asp  
 210 215 220  
 Thr Ile Leu Asn Arg Leu Lys Lys Gly Lys Pro Tyr Ser Ile Val Val  
 225 230 235 240  
 Val Ala Glu Gly Ile Gln Thr Asp Gly Arg Lys Arg Ala Ala Glu Tyr  
 245 250 255  
 Ile Ala Gln Glu Ile Glu Tyr Glu Thr Gly Ile Glu Thr Arg Glu Thr  
 260 265 270  
 Val Leu Gly Tyr Ile Gln Arg Gly Gly Ser Pro Thr Pro Phe Asp Arg  
 275 280 285  
 Asn Leu Ser Thr Arg Met Gly Gly His Ala Thr Glu Leu Ile Ala Asn

290		295		300
Gly Gln Phe Gly Arg Met Ile Ala Leu Lys Gly Asp Glu Ile Ser Ser				
305		310		315
Val Ala Leu Glu Glu Val Ala Gly Lys Leu Lys Leu Val Thr Glu Glu				
	325		330	335
His Asp Leu Val Val Gln Gly Arg Arg Met Gly Ile Cys Phe Gly				
	340		345	350

<210> 6994  
 <211> 391  
 <212> PRT  
 <213> B.fragilis

<400> 6994

Tyr Ser Leu Phe Tyr Leu Ile Leu Val Met Val Lys Lys Ile Leu Val				
1	5	10	15	
Asp Lys Tyr Asp Leu Phe Val Leu Ser Ser Leu Ile His Tyr Leu Ile				
	20	25	30	
Asn Leu Leu Tyr Met Cys Glu Ile Arg Phe Leu Leu Phe Ile Leu Phe				
	35	40	45	
Met Gly Cys Leu Cys Ala Cys Gly Arg Val Asp Leu Lys Ser Pro Lys				
	50	55	60	
Thr Leu Phe Ser Ser Val Ser Glu Ile Ser Glu Val Glu Trp Ser Ile				
	65	70	75	80
Glu Ala Asp Ser Leu Ala Arg Val Glu Gly Ile Gln Cys Asn Asp Ser				
	85	90	95	
Val Leu Leu Val Phe Asp Phe Tyr Ser Gly Lys Ser Tyr Ser Leu Phe				
	100	105	110	
Asp Ile Tyr Ser Gly Lys Met Ile Ser Arg Leu Gly Ser Ile Gly Gln				
	115	120	125	
Gly Arg Asp Glu Ile Pro Leu Gly Val Phe Gly Tyr Ile Glu Asn Asn				
	130	135	140	
Arg Phe Tyr Ile Tyr Tyr Asp Gln Thr Gly Tyr Ile Gly Lys Phe Asn				
	145	150	155	160
Leu Asp Ser Cys Ser Val Ile Leu Asp Cys Pro Pro Val Cys Leu Ala				
	165	170	175	
Lys Tyr Lys Ile Pro Gly Ala Gln Ile Ser Lys Ile Ala Val Val Asn				
	180	185	190	
Asp Ser Leu Phe Leu Gly Ala Gly Thr Tyr Asn Ala Glu Tyr Gln Tyr				
	195	200	205	
Leu Leu Phe Asp Asn Lys Ser Asn Val Ile Asp Ser Ala Val Thr Ile				
	210	215	220	
Tyr Asn Ser Asn Glu Ala Asn Leu Asn Ile Tyr His Lys Phe Leu Ser				
	225	230	235	240
Asn Gln Gly Arg Leu Arg Lys Arg Pro Gly Lys Ser Gln Phe Val Tyr				
	245	250	255	
Ser Ile Asn Asn Ser Ser Asn Ile Asp Phe Phe Glu Ile Lys Asn Asn				
	260	265	270	
Lys Ile Asn Leu Ile Lys Ser Leu Arg Phe Asn Asn Pro Glu Tyr Thr				
	275	280	285	
Pro Thr Gln Asp Gly Asp Tyr Ser Arg Val Leu Phe Ser Asp Asn Asn				
	290	295	300	
Val Ile Gly Tyr Ile Asp Ile Gly Val Thr Asp Lys Tyr Val Tyr Thr				
	305	310	315	320
Leu Tyr Thr Asn Lys Lys Ile Cys Asp Asn Asn Thr Tyr Asn Asp Leu				
	325	330	335	
Ser Ser Thr Thr Val Leu Val Phe Asp Trp Asn Gly Asn Pro Val Lys				
	340	345	350	
Gln Tyr Glu Leu Ser Lys Glu Ala Tyr Tyr Ile Thr Ile Asp Lys Thr				

355	360	365
Leu Gln Arg Met Tyr Ala Val	Val Arg Lys Pro Asp	Met Gly Trp Thr
370	375	380
Ile Val Cys Tyr Ala Ile Asp		
385	390	

<210> 6995  
 <211> 207  
 <212> PRT  
 <213> B.fragilis

<400> 6995

Met Gln Ser Phe	Ala His Phe	Ser Leu Phe	Cys Ala Leu	Lys Gly Leu
1	5	10	15	
Ile Met Gly Lys	Asn Ile Ala	Ile Phe Ala	Ser Gly Ser	Gly Thr Asn
20	25	30		
Ala Glu Asn Ile	Ile Arg Tyr	Phe Glu Lys	Asn Ala Ser	Val Arg Val
35	40	45		
Arg Leu Val Leu	Ser Asn Arg	Lys Asp Ala	Tyr Val Leu	Glu Arg Ala
50	55	60		
Cys Arg Leu Gly	Val Pro Tyr	Arg Ala Phe	Pro Lys Ser	Asp Trp Glu
65	70	75	80	
Ala Ala Glu Ser	Ile Leu Asp	Leu Leu Arg	Lys Tyr Gln	Ile Asp Phe
85	90	95		
Ile Val Leu Ala	Gly Phe Leu	Leu Arg Ile	Pro Asp Ala	Leu Leu His
100	105	110		
Ala Tyr Pro Asp	Lys Ile Ile	Asn Ile His	Pro Ala Leu	Leu Pro Lys
115	120	125		
Phe Gly Gly Lys	Gly Met Tyr	Gly Asp Arg	Val His Glu	Ala Val Val
130	135	140		
Met Ala Gly Glu	Ser Glu Ser	Gly Ile Thr	Ile His Tyr	Ile Asp Glu
145	150	155	160	
His Tyr Asp Glu	Gly Ser Thr	Val Phe Gln	Ala Lys Cys	Pro Val Leu
165	170	175		
Pro Gly Asp Thr	Pro Ala Asp	Val Ala Lys	Lys Val His	Ala Leu Glu
180	185	190		
Tyr Glu Trp Phe	Pro Lys Ile	Ile Glu Arg	Val Val Asn	Ser Leu
195	200	205		

<210> 6996  
 <211> 80  
 <212> PRT  
 <213> B.fragilis

<400> 6996

Pro Val Leu Ser	Phe Gln Phe	Ala Cys Tyr	Leu Leu Ala	Pro Val Lys
1	5	10	15	
Ile Val Pro Gly	Val Tyr Ala	Pro Ala Ile	Leu Val His	Pro Asp Arg
20	25	30		
His Asn Met Gln	Met Val Ala	Val Asp Val	Leu Val Leu	Glu Asn Glu
35	40	45		
Ile Arg Leu Val	Ala Glu Ala	His Leu Leu	Gln Ile Leu	Pro Cys Asp
50	55	60		
Ile Leu Lys Leu	Arg Val Arg	Gln Asn Ile	Val Gly Met	Arg Ile Glu
65	70	75	80	

<210> 6997  
 <211> 111  
 <212> PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6997

```

Ser Tyr Tyr Ser Pro Thr Glu Ser Lys Val Met Met Asn Glu Asn Asn
1          5          10          15
Asp Val Phe Thr Leu Glu Asn Glu Pro Leu Ala Thr Val Val Gln Asn
          20          25          30
Met Arg Lys Gly Ser Lys Trp Leu Ser Thr Phe Leu Glu Ser Tyr Arg
          35          40          45
Pro Pro Leu Asp Gly Glu Arg Tyr Leu Thr Asp Arg Glu Val Ala Glu
          50          55          60
Leu Leu Arg Val Ser Arg Arg Thr Leu Gln Glu Tyr Arg Asn Asn Arg
65          70          75          80
Val Leu Pro Phe Ile Leu Leu Gly Gly Lys Val Leu Tyr Pro Glu Ser
          85          90          95
Gly Leu Arg Glu Leu Leu Glu Ala Asn Tyr Arg Lys Pro Leu Glu
          100          105          110

```

&lt;210&gt; 6998

&lt;211&gt; 68

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6998

```

Ile Asp Thr Thr Ala Val Ala Ser Thr Pro Arg Gly Glu His Gly Phe
1          5          10          15
Cys Gly Gly Phe Thr Thr Phe Ser Thr Leu Ala Asn Asp Ser Leu Ser
          20          25          30
Leu Leu Lys Gly Gly Phe Tyr Gly Ile Phe Thr Phe Tyr Val Phe Ile
          35          40          45
Ser Ile Leu Leu Gly Leu Leu Ala Val Leu Ala Gly Gly Tyr Leu Gly
          50          55          60
Glu Gln Phe Lys
65

```

&lt;210&gt; 6999

&lt;211&gt; 217

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 6999

```

His Pro Gly Ile Gly Ser Gly Lys Ile Gly Phe Leu Val Glu Gly Asn
1          5          10          15
Cys His Glu Lys Lys Lys Leu Ala Asn Ile Leu Asn Pro Gly Gln Pro
          20          25          30
Asn Arg Leu Val Leu Gln Tyr Ile Phe Cys Leu Lys Asp Met Lys Pro
          35          40          45
Glu Glu Ile Asn Gly His Gln Val Gly Thr His Ser Ile Leu Val Arg
          50          55          60
Lys Trp Glu Ala Ser Ala Trp Ser Cys His Pro Glu Thr Lys Thr Gln
65          70          75          80
Gln Cys Asp Leu Asp Leu Trp Glu Gly Glu Asn Thr Tyr Arg Cys Ile
          85          90          95
Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg Asp Ile Val Glu Phe Tyr
          100          105          110
Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe Asp Asp Met Asn Asn Gly
          115          120          125
Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe Met Ala Glu Asn Thr Val
          130          135          140

```

1  
 2  
 3  
 4  
 5  
 6  
 7  
 8  
 9  
 10  
 11  
 12  
 13  
 14  
 15  
 16  
 17  
 18  
 19  
 20  
 21  
 22  
 23  
 24  
 25  
 26  
 27  
 28  
 29  
 30  
 31  
 32  
 33  
 34  
 35  
 36  
 37  
 38  
 39  
 40  
 41  
 42  
 43  
 44  
 45  
 46  
 47  
 48  
 49  
 50  
 51  
 52  
 53  
 54  
 55  
 56  
 57  
 58  
 59  
 60  
 61  
 62  
 63  
 64  
 65  
 66  
 67  
 68  
 69  
 70  
 71  
 72  
 73  
 74  
 75  
 76  
 77  
 78  
 79  
 80  
 81  
 82  
 83  
 84  
 85  
 86  
 87  
 88  
 89  
 90  
 91  
 92  
 93  
 94  
 95  
 96  
 97  
 98  
 99  
 100

Phe Leu Leu Leu Thr Ala Leu Ile His Asn Phe Tyr Lys Thr Ile Met  
 145 150 155 160  
 Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu Lys Lys Thr Ser Arg Ile  
 165 170 175  
 Lys Ala Phe Val Phe Arg Phe Ile Ser Val Pro Ala Lys Trp Ile Met  
 180 185 190  
 Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr Thr Glu Asn Arg Ala Tyr  
 195 200 205  
 Ala Lys Pro Phe Lys Thr Glu Phe Gly  
 210 215

<210> 7000

<211> 599

<212> PRT

<213> B.fragilis

<400> 7000

Leu Met Lys Pro Gly Arg Pro Leu Ser Glu Pro Ile Leu Arg Arg Lys  
 1 5 10 15  
 Lys Pro Gly Asn Gly Thr Ile Thr Asp Ile Asn Gly Asn Phe Ser Leu  
 20 25 30  
 Ser Val Gly Thr Lys Ser Thr Ile Ile Ser Tyr Ile Gly Tyr Ile  
 35 40 45  
 Thr Lys Glu Val Pro Val Gly Asn Asn Thr Ser Leu Thr Val Gln Leu  
 50 55 60  
 Ala Glu Asn Thr Lys Gln Leu Asp Glu Val Val Val Thr Ala Leu Gly  
 65 70 75 80  
 Ile Lys Arg Glu Glu Lys Ala Leu Gly Tyr Ala Val Gln Lys Val Asp  
 85 90 95  
 Gly Asp Lys Leu Ala Ala Val Lys Thr Val Asn Val Ala Thr Ser Leu  
 100 105 110  
 Thr Gly Lys Ile Ala Gly Leu Asn Val Lys Asn Ser Thr Glu Phe Asn  
 115 120 125  
 Thr Ser Pro Ser Leu Ser Leu Arg Ala Ser Ala Pro Leu Leu Val Ile  
 130 135 140  
 Asp Gly Val Pro Tyr Gly Asn Val Gly Leu Asn Asp Ile Ala Ala Asp  
 145 150 155 160  
 Asp Ile Glu Ser Val Asp Val Leu Lys Gly Ala Thr Ala Ser Ala Leu  
 165 170 175  
 Tyr Gly Ala Arg Gly Gly Ala Gly Ala Val Met Ile Thr Thr Lys Lys  
 180 185 190  
 Gly Lys Glu Glu Gly Leu Asn Val Thr Val Asn Ser Ser Thr Met Phe  
 195 200 205  
 Ala Ala Gly Tyr Leu Arg Lys Pro Glu Val Gln Thr Ser Tyr Ser Ser  
 210 215 220  
 Gly Ser Gln Gly Thr Tyr Ser Thr Gly Gly Tyr Val Trp Gly Asp Lys  
 225 230 235 240  
 Leu Asp Ile Gly Arg Thr Ala Leu Gln Tyr Asp Pro Tyr Thr His Glu  
 245 250 255  
 Trp Val Asp Met Pro Leu Val Ser Lys Gly Lys Asn Asn Leu Lys Asn  
 260 265 270  
 Phe Gln Glu Leu Ser Met Val Thr Asn Asn Asn Val Ser Val Ser Gln  
 275 280 285  
 Lys Gly Lys Tyr Gly Ser Val Arg Thr Ser Leu Thr His Val Tyr Asn  
 290 295 300  
 Lys Gly Gln Tyr Pro Asn Gln Lys Leu Asn Lys Ile Thr Tyr Ser Val  
 305 310 315 320  
 Ser Gly Asp Met Lys Trp Lys Lys Phe Ser Phe Asp Gly Gly Leu Thr  
 325 330 335

Tyr Asn Lys Arg Phe Tyr Pro Asn Asp Met Gly Ala Gly Tyr Gly Gly  
 340 345 350  
 Ser Gly Phe Leu Tyr Asn Leu Leu Val Trp Ser Gly Ala Glu Tyr Asp  
 355 360 365  
 Ile Arg Asp Tyr Lys Asn Tyr Trp Ile Lys Gln Asp Glu Gln Gln Asn  
 370 375 380  
 Trp Met Asn Asp Val Trp Tyr Asp Asn Pro Tyr Tyr Leu Ala His Glu  
 385 390 395 400  
 Met Thr Ser Ser Asn Asp Tyr Asp Lys Val Asn Thr Tyr Leu Ser Gly  
 405 410 415  
 Lys Tyr Asp Ile Met Pro Trp Leu Asn Phe Ser Met Arg Ala Gly Ala  
 420 425 430  
 Asp Ala Tyr Ala Ser Arg Thr Glu Lys Lys Asn Ala Met Ser Ala Arg  
 435 440 445  
 Gly Gly Trp Asp Lys Asn Gly Tyr Phe Tyr Thr Ser Lys Ser Thr Gly  
 450 455 460  
 Phe Ser Phe Asn Gly Asp Ala Leu Leu Ser Ala Asn His Ser Phe Gly  
 465 470 475 480  
 Asp Phe Ala Ile Asp Gly Phe Val Gly Gly Thr Ile Tyr Tyr Tyr Tyr  
 485 490 495  
 Asp Asp Ala Ile Ser Ser Asn Thr Arg Asn Gly Leu Ser Ile Pro Gly  
 500 505 510  
 Tyr Tyr Ser Leu Lys Ala Ser Val Asp Pro Ile Ala Ser Ser Ser Ser  
 515 520 525  
 Tyr Lys Gln Lys Gln Val Asn Ser Ile Tyr Gly Lys Phe Ser Ala Ser  
 530 535 540  
 Trp Lys Ser Thr Val Phe Val Asp Val Thr Ala Arg Asn Asp Trp Ser  
 545 550 555 560  
 Ser Thr Leu Pro Ser Glu Thr Arg Ser Tyr Phe Tyr Pro Ala Val Ser  
 565 570 575  
 Gly Ser Ile Ile Met Ser Gln Leu Leu Lys Met Pro Glu Ser Ser Pro  
 580 585 590  
 Arg Gly Trp Lys Asp Arg Arg  
 595

&lt;210&gt; 7001

&lt;211&gt; 96

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7001

Asn His Phe Tyr Tyr Tyr Tyr Asp Ser Thr Leu Ser Leu Lys Gln Lys  
 1 5 10 15  
 Asn Ile Gln Glu Asp Ile Gly Val Ser Thr Cys Met Lys Val His Arg  
 20 25 30  
 Gln Phe Val Trp Arg Gln Thr Val Arg Gln Ile Glu Phe Phe Lys Ser  
 35 40 45  
 Lys Ser Leu Gln Ile Tyr Asp Asn Leu Leu Lys Leu Pro Ile Phe Arg  
 50 55 60  
 Glu Ala Glu Tyr Ile Phe Ala Leu Glu Lys Asn Thr Phe Val Tyr Glu  
 65 70 75 80  
 Thr Ile Ser Asn Asn Val Val Cys Leu Cys Gln His Gly Ile Cys Gly  
 85 90 95

&lt;210&gt; 7002

&lt;211&gt; 137

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7002

Asn Phe Leu Asn Gln Asn His Tyr Lys Ser Met Thr Ile Tyr Leu Asn  
 1 5 10 15  
 Phe Gln Phe Phe Gly Arg Gln Asn Thr Phe Ser Leu Leu Lys Lys Ile  
 20 25 30  
 Pro Leu Cys Met Lys Leu Ser Ala Ile Met Leu Phe Val Phe Ala Ser  
 35 40 45  
 Met Ala Phe Ala Ala Lys Gly Tyr Ser Gln Ser Val Arg Val Thr Leu  
 50 55 60  
 Asn Val Asn Asn Ser Ser Leu Gln Lys Val Leu Asp Glu Ile Glu Lys  
 65 70 75 80  
 Gln Ser Glu Phe His Phe Phe Tyr Asn Asn Lys Gln Val Asp Ile Ser  
 85 90 95  
 Arg Asn Val Thr Ile Lys Ser Asn Gln Lys Glu Ile Ser Gln Val Leu  
 100 105 110  
 Asn Gln Leu Phe Ala Gly Thr Asn Ile Gly Tyr Lys Ile Leu Glu Asn  
 115 120 125  
 Ser Ile Ile Leu Cys Pro Lys His Ile  
 130 135

&lt;210&gt; 7003

&lt;211&gt; 406

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7003

Glu Thr Met Leu Arg Met Arg Leu Arg Phe Pro Ala Glu Pro Gly Arg  
 1 5 10 15  
 Thr Glu Phe His Arg Leu Leu Cys Ala Arg Cys Arg Tyr Thr Cys Arg  
 20 25 30  
 Pro Ser Phe Trp Ala Lys Ile Ile Leu Phe Ser Lys Lys Ile Arg Phe  
 35 40 45  
 Leu Val Arg Arg Phe Leu Phe Trp Phe Val Leu Ser Ile Lys Ala Arg  
 50 55 60  
 Ile Met Asp Glu Ser Cys Tyr Ile Asn Glu Ser Val Leu Leu Asn Tyr  
 65 70 75 80  
 Phe Ala Gly Glu Leu Pro Ala Asp Arg Arg Lys Glu Val Glu Glu Trp  
 85 90 95  
 Ile Ala Ala Ser Glu Asp Asn Glu Lys Met Ala Arg Asp Ile Phe Arg  
 100 105 110  
 Leu Tyr Arg Ala Ala Asp Thr Leu Asp Tyr Met Asn Arg Val Asp Ala  
 115 120 125  
 Ser Ala Ala Leu Gln Gln Val Lys Gly Arg Ile His Lys His Arg His  
 130 135 140  
 Arg Ile Ser Trp Met Val Trp Gly Gln Arg Ile Ala Ala Cys Met Ala  
 145 150 155 160  
 Leu Pro Leu Leu Ala Thr Thr Leu Tyr Leu Ile Leu Lys Asn Pro Pro  
 165 170 175  
 Gln Glu Tyr Val Glu Ile Arg Thr Asn Pro Gly Met Val Ala Glu Ala  
 180 185 190  
 Asn Leu Pro Asp Gly Thr Lys Val Trp Leu Asn Ser Gly Ser Ser Leu  
 195 200 205  
 Lys His Pro Val Lys Phe Thr Gly Asp Thr Arg Thr Val Glu Leu Asp  
 210 215 220  
 Gly Glu Ala Tyr Phe Ser Val Arg Lys Asp Arg Ser Lys Arg Phe Val  
 225 230 235 240  
 Val Asn Thr Pro Phe Asn Ile Gln Thr Glu Val Leu Gly Thr Glu Phe  
 245 250 255  
 Asn Met Glu Ala Tyr Arg Thr Asp Ser Val Val Arg Thr Thr Leu Val



<400> 7005															
Pro	Lys	Asn	Val	Phe	Phe	Leu	Lys	Ile	Ile	Leu	Phe	Leu	Pro	Lys	Thr
1				5					10					15	
Lys	Val	Tyr	Met	Tyr	Asn	Asp	Thr	Ser	Arg	Thr	Val	Ser	Asp	Glu	Thr
			20					25					30		
Leu	Phe	Phe	Gln	Val	Gln	Gln	Gly	Asn	Glu	Gly	Ala	Phe	Glu	Ala	Leu
		35					40					45			
Phe	Leu	Arg	His	Tyr	Pro	Ala	Leu	Cys	Ala	Tyr	Ala	Arg	Leu	Phe	Val
	50					55					60				
Glu	Pro	Asp	Asp	Gly	Gln	Glu	Ile	Val	Ser	Asp	Val	Met	Val	Trp	Leu
65					70					75				80	
Trp	Glu	Asn	Lys	Glu	Met	Gln	Ala	Phe	Glu	Ser	Ser	Leu	Lys	Ser	Tyr
			85						90					95	
Leu	Phe	Lys	Ala	Val	Lys	Asn	Arg	Cys	Leu	Thr	Leu	Ile	Asn	Arg	Asn
			100					105					110		

[illegible]

Glu Val Lys Gln Arg Ile Glu Lys Met Ile Phe Asp Asn Leu Gln Ser  
 115 120 125  
 Gln Tyr Asp Asp Pro Asp Phe Tyr Ala Ile Gln Glu Leu Thr Glu Lys  
 130 135 140  
 Ile Glu Glu Ala Leu Ala Arg Leu Pro Glu Asn Val Arg Glu Ala Phe  
 145 150 155 160  
 Glu Leu Asn Arg Phe Gln Asn Leu Thr Tyr Asn Glu Ile Ala Glu Arg  
 165 170 175  
 Leu Gly Val Ser Pro Lys Thr Ile Asp Tyr Arg Ile Gln Gln Ala Leu  
 180 185 190  
 Lys Gln Leu Arg Ile Asp Leu Lys Glu Tyr Leu Pro Leu Leu Leu Pro  
 195 200 205  
 Phe Leu Leu His  
 210

<210> 7006  
 <211> 67  
 <212> PRT  
 <213> B.fragilis

<400> 7006  
 Ser Phe Gln Pro Arg Gly Glu Asp His Tyr Trp Ile Ser Ser Asn Ala  
 1 5 10 15  
 Gly Leu Ile Thr Ile Asn Pro Ile Thr Lys Gln His Phe Arg Gln Phe  
 20 25 30  
 Thr Val Asn Asp Gly Leu Gln Gly Asn Gln Phe Thr Ala Gln Ser Ser  
 35 40 45  
 Leu Lys Thr Ala Ser Gly Lys Leu Tyr Phe Gly Gly Ile Ser Gly Phe  
 50 55 60  
 Asn Ser Val  
 65

<210> 7007  
 <211> 129  
 <212> PRT  
 <213> B.fragilis

<400> 7007  
 Leu Phe Arg Leu Cys Cys Thr Phe Met Gln Met Lys Lys Ser Asn Ile  
 1 5 10 15  
 Tyr Ile Gly Glu Ile Ile Lys Asn Val Met Ser Glu Arg Gln Val Thr  
 20 25 30  
 Lys Ala Glu Leu Ala Arg Arg Leu Asp Val Lys Pro Gln Ser Val Asp  
 35 40 45  
 Tyr Leu Leu Thr Arg Lys Ser Ile Asp Thr Asp Thr Leu Tyr Asn Ile  
 50 55 60  
 Ser Ile Ala Leu Asp Tyr Asp Phe Ser Leu Leu Tyr Ser Ile Lys Arg  
 65 70 75 80  
 Glu Gln Arg Asn Ser Asp Asn Glu Gly Ile Arg Tyr Lys Leu Gly Asn  
 85 90 95  
 Ala Lys Ile Met Val Glu Ile Glu Leu Gln Gln Asp Glu Ile Ile Lys  
 100 105 110  
 Leu Asn Leu Lys Lys Lys Ile Ala Glu Leu Leu Asp Gly Gly Ala Asn  
 115 120 125  
 Lys

<210> 7008  
 <211> 77

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7008

His	Arg	Lys	Thr	Ser	Pro	Ile	Leu	Pro	Thr	Lys	Ala	Arg	Pro	Tyr	Asp
1				5					10					15	
Phe	Asn	Thr	Ala	Asp	Lys	Leu	Asn	Thr	Leu	Leu	Ile	Asn	Ala	Leu	Val
			20					25					30		
Ser	Thr	Gly	Glu	Leu	Lys	Glu	Ile	Glu	Glu	Tyr	Asp	Val	Asp	Phe	Asp
		35					40					45			
His	Gln	Phe	Leu	Glu	Thr	Glu	Lys	Tyr	Asp	Gly	Lys	Thr	Asp	Leu	Gln
	50					55					60				
Lys	Val	Pro	Arg	Leu	Gln	Ala	Trp	Arg	Ile	Cys	Tyr	Arg			
65					70					75					

&lt;210&gt; 7009

&lt;211&gt; 115

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7009

Tyr	Asp	Met	Ala	Lys	Ile	Gln	Ile	Lys	Ser	Glu	Lys	Leu	Thr	Pro	Phe
1				5					10					15	
Gly	Gly	Ile	Phe	Ser	Ile	Met	Glu	Lys	Phe	Asp	Ser	Met	Leu	Ser	Pro
			20					25					30		
Val	Ile	Asp	Ser	Thr	Leu	Gly	Gln	Arg	Cys	Ser	Ser	Ile	Phe	Gly	Tyr
		35					40					45			
Gln	Phe	Ser	Glu	Ile	Val	Arg	Ser	Leu	Met	Ser	Val	Tyr	Phe	Cys	Gly
	50					55					60				
Gly	Ser	Cys	Val	Glu	Asp	Val	Thr	Ser	Gln	Leu	Met	Arg	His	Leu	Ser
65					70					75				80	
Tyr	His	Pro	Thr	Leu	Arg	Thr	Cys	Ser	Ser	Asp	Thr	Ile	Leu	Arg	Ala
				85					90					95	
Ile	Lys	Glu	Leu	Thr	Gln	Glu	Asn	Ile	Ser	Tyr	Thr	Ser	Asp	Gln	Gly
			100				105							110	
Lys	Thr	Leu													
		115													

&lt;210&gt; 7010

&lt;211&gt; 83

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7010

Val	Pro	Glu	Gln	Gln	Lys	Val	Ala	Gln	Asp	Phe	Ala	Met	Ser	Glu	Phe
1				5					10					15	
Ser	Leu	Ile	Leu	Val	Leu	Gln	Lys	Glu	Asn	Lys	Gln	Asn	Ser	Asn	Met
			20					25					30		
Thr	Trp	Gln	Lys	Tyr	Lys	Leu	Asn	Leu	Arg	Asn	Ser	His	Leu	Leu	Glu
		35					40					45			
Glu	Phe	Phe	Gln	Ser	Trp	Arg	Asn	Leu	Thr	Pro	Cys	Phe	His	Pro	Leu
	50					55					60				
Ser	Thr	Gln	His	Trp	Val	Arg	Asp	Ala	Ala	Val	Ser	Ser	Asp	Ile	Ser
65					70					75				80	
Ser	Ala	Arg													

&lt;210&gt; 7011

&lt;211&gt; 725

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7011

Phe	Leu	Leu	Asn	His	Ile	Met	Lys	Asn	Met	Lys	Lys	Leu	Thr	Phe	Lys
1			5					10						15	
Leu	Ala	Cys	Phe	Leu	Ser	Leu	Leu	Val	Ser	Ser	Val	Ala	Met	Ala	
		20					25					30			
Glu	Ser	Ile	Thr	Ser	Pro	Asn	Gly	Leu	Leu	Lys	Leu	Asn	Val	Ser	Val
		35					40					45			
Asn	Glu	Lys	Gly	Glu	Pro	Val	Tyr	Glu	Leu	Ser	Tyr	Lys	Gly	Lys	Glu
		50				55					60				
Val	Ile	Lys	Pro	Ser	Lys	Leu	Gly	Leu	Glu	Leu	Lys	Asp	Asp	Pro	Gly
65					70					75				80	
Leu	Met	Asp	Gly	Phe	Thr	Leu	Ser	Asp	Ala	Lys	Thr	Ser	Ser	Phe	Asp
				85					90					95	
Glu	Thr	Trp	Glu	Pro	Val	Trp	Gly	Glu	Val	Lys	Gln	Ile	Arg	Asn	Asn
			100					105					110		
Tyr	Asn	Glu	Leu	Ala	Ile	Thr	Leu	Asp	Gln	Lys	Ala	Gln	Asp	Arg	Lys
		115					120					125			
Met	Val	Ile	Arg	Phe	Arg	Leu	Tyr	Asn	Asp	Gly	Leu	Gly	Phe	Arg	Tyr
		130				135					140				
Glu	Phe	Pro	Gln	Gln	Lys	Asn	Leu	Asn	Tyr	Phe	Val	Ile	Lys	Glu	Glu
145					150					155					160
His	Ser	Gln	Phe	Ala	Met	Ala	Gly	Asp	His	Thr	Ala	Phe	Trp	Ile	Pro
			165						170					175	
Gly	Asp	Tyr	Asp	Thr	Gln	Glu	Tyr	Asp	Tyr	Thr	Arg	Ser	Lys	Leu	Ser
			180					185					190		
Glu	Ile	Arg	Gly	Leu	Met	Lys	Thr	Ala	Val	Thr	Pro	Asn	Ala	Ser	Gln
		195					200					205			
Thr	Pro	Phe	Ser	Pro	Thr	Gly	Val	Gln	Thr	Ala	Leu	Gln	Met	Lys	Thr
		210				215					220				
Asp	Asp	Gly	Leu	Tyr	Ile	Asn	Leu	His	Glu	Ala	Ala	Leu	Val	Asp	Tyr
225					230					235				240	
Ser	Cys	Met	His	Leu	Asn	Leu	Asp	Asp	Lys	Asn	Phe	Val	Phe	Glu	Ser
			245						250					255	
Trp	Leu	Thr	Pro	Asp	Ala	Gln	Gly	Thr	Lys	Gly	Tyr	Met	Gln	Thr	Pro
			260					265					270		
Cys	His	Ser	Pro	Trp	Arg	Thr	Val	Met	Val	Ser	Asp	Asp	Ala	Arg	Asp
			275				280					285			
Ile	Leu	Ala	Ser	Lys	Leu	Thr	Leu	Asn	Leu	Asn	Glu	Pro	Cys	Lys	Leu
			290			295					300				
Glu	Asp	Thr	Ser	Trp	Ile	Lys	Pro	Val	Lys	Tyr	Val	Gly	Val	Trp	Trp
305					310					315				320	
Glu	Met	Ile	Thr	Gly	Lys	Ser	Thr	Trp	Ala	Tyr	Thr	Asp	Asp	Val	Tyr
			325						330					335	
Ser	Val	Lys	Leu	Gly	Glu	Thr	Asp	Tyr	Thr	Lys	Thr	Lys	Pro	Asn	Gly
			340					345					350		
Arg	His	Gly	Ala	Asn	Asn	Glu	Asn	Val	Lys	Arg	Tyr	Ile	Asp	Phe	Ala
		355					360					365			
Ala	Glu	His	Gly	Phe	Asp	Gln	Val	Leu	Val	Glu	Gly	Trp	Asn	Glu	Gly
		370				375					380				
Trp	Glu	Asp	Trp	Phe	Gly	Lys	Ser	Lys	Asp	Tyr	Val	Phe	Asp	Phe	Val
385					390					395				400	
Thr	Pro	Tyr	Pro	Asp	Phe	Asp	Val	Lys	Met	Leu	Asn	Glu	Tyr	Ala	Arg
			405						410					415	
Ser	Lys	Gly	Val	Lys	Leu	Met	Met	His	His	Glu	Thr	Ser	Ala	Ser	Val
			420					425					430		
Arg	Asn	Tyr	Glu	Arg	His	Met	Asp	Glu	Ala	Tyr	Gln	Phe	Met	Glu	Asp

435	440	445
Asn Gly Tyr Asn Ala Val Lys Ser Gly Tyr Val Gly Asn Ile Ile Pro		
450	455	460
Arg Gly Glu His His Tyr Gly Gln Trp Leu Asn Asn His Tyr Leu Tyr		
465	470	475
Ala Val Lys Lys Ala Ala Asp His Lys Ile Met Val Asn Ala His Glu		480
	485	490
Ala Val Arg Pro Thr Gly Leu Cys Arg Thr Tyr Pro Asn Leu Ile Gly		495
	500	505
Asn Glu Ser Ala Arg Gly Thr Glu Tyr Glu Ala Phe Gly Gly Asn Lys		510
	515	520
Pro Phe His Thr Thr Leu Leu Pro Phe Thr Arg Leu Ile Gly Gly Pro		525
	530	535
Met Asp Tyr Thr Pro Gly Ile Phe Asp Thr Gln Leu Ser Phe Leu Ser		540
545	550	555
Gly Glu His Ser Phe Val His Thr Thr Leu Ala Lys Gln Leu Ala Leu		560
	565	570
Tyr Val Thr Leu Tyr Ser Pro Leu Gln Met Ala Ala Asp Leu Pro Glu		575
	580	585
Ser Tyr Glu Arg Tyr Met Asp Ala Phe Gln Phe Ile Lys Asp Val Ala		590
	595	600
Val Asp Trp Asp Glu Ser Lys Tyr Ile Glu Ala Glu Pro Gly Glu Tyr		605
	610	615
Ile Thr Val Ala Arg Lys Ala Lys Asn Thr Asn Asn Trp Phe Val Gly		620
625	630	635
Gly Ile Thr Gly Glu Asn Ala Arg Thr Ser Thr Phe Val Leu Asp Phe		640
	645	650
Leu Glu Pro Gly Lys Gln Tyr Val Ala Thr Leu Tyr Ala Asp Gly Lys		655
	660	665
Asp Ala Asp Tyr Glu Lys Asn Pro Thr Ser Tyr Gln Ile Lys Lys Gly		670
	675	680
Leu Val Thr Tyr Lys Thr Lys Ile Ser Thr Asp Leu Ala Arg Ser Gly		685
	690	695
Gly Phe Ala Ile Ser Leu Ile Glu Ala Thr Pro Ala Asp Lys Lys Ala		700
705	710	715
Leu Lys Lys Trp Lys		720
	725	

&lt;210&gt; 7012

&lt;211&gt; 113

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7012

Arg Lys Leu Arg Asn Thr Met Leu Thr Leu Thr Ile Ser Ser Leu Lys	
1	5
Arg Arg Ser Met Met Ala Lys Pro Thr Tyr Lys Lys Phe Leu Gly Tyr	10
	20
Arg Pro Gly Val Tyr Val Ile Gly Asp Lys Asn Val Tyr Ile Glu Asn	25
	30
35	40
Ser Glu Gly Asn Pro Ile Val Arg Phe His Ser Ala Asp Thr His Lys	45
50	55
Lys Ile Phe Ala Leu Leu Glu Ser Gln Asn Asn Pro Val Lys Arg Phe	60
65	70
Arg Gly Lys Arg Gly Phe Pro Leu Gln Arg Lys Ile Ser Val Lys Lys	75
	80
	85
Arg Lys Leu Cys Lys Leu Phe Tyr Ile Pro Ala Asn Pro Arg His Leu	90
	95
	100
	105
	110
Val	

<210> 7013  
 <211> 628  
 <212> PRT  
 <213> B.fragilis

<400> 7013

Ile	Thr	Pro	Ser	Phe	Tyr	Phe	Met	Ala	Ile	Thr	Ile	Ile	Ile	Leu	Val
1				5					10					15	
Leu	Ser	Ala	Val	Phe	Phe	Met	Ser	Gly	Lys	Val	Arg	Ser	Asp	Leu	Val
			20					25					30		
Ala	Leu	Cys	Ala	Leu	Val	Leu	Leu	Ile	Leu	Phe	Asn	Ile	Leu	Thr	Pro
		35					40					45			
Glu	Glu	Ala	Leu	Ser	Gly	Phe	Ser	Asn	Ser	Val	Val	Ile	Met	Met	Val
	50					55					60				
Gly	Leu	Phe	Val	Val	Gly	Gly	Ala	Ile	Phe	Gln	Thr	Gly	Leu	Ala	Lys
65					70					75				80	
Met	Ile	Ser	Ser	Arg	Ile	Leu	Lys	Phe	Ala	Gly	Thr	Ser	Glu	Leu	Lys
				85					90					95	
Leu	Phe	Ile	Leu	Ile	Ile	Leu	Val	Thr	Ala	Ala	Ile	Gly	Ala	Phe	Val
			100					105					110		
Ser	Asn	Thr	Gly	Thr	Val	Ala	Leu	Met	Leu	Pro	Ile	Val	Val	Ser	Met
	115						120					125			
Ala	Met	Ser	Ala	Asn	Ile	Asn	Val	Ser	Arg	Leu	Leu	Met	Pro	Leu	Ala
	130					135					140				
Phe	Ala	Ser	Ser	Met	Gly	Gly	Met	Met	Thr	Leu	Ile	Gly	Thr	Pro	Pro
145					150					155				160	
Asn	Leu	Val	Ile	Gln	Asn	Ala	Leu	Ile	Glu	Ala	Gly	Tyr	Glu	Arg	Leu
				165					170					175	
Ser	Phe	Phe	Thr	Phe	Thr	Pro	Val	Gly	Leu	Val	Cys	Val	Thr	Val	Gly
			180					185					190		
Leu	Ile	Val	Leu	Ile	Pro	Leu	Ser	Lys	Ile	Phe	Leu	Thr	Lys	Lys	Ser
	195					200						205			
Asp	Lys	Glu	Ala	Arg	Gly	Lys	Arg	Lys	Asn	Lys	Ser	Leu	Gln	Glu	Leu
	210					215					220				
Ala	Gly	Glu	Tyr	Gln	Leu	Ser	Gln	Asn	Leu	Tyr	Arg	Val	Glu	Val	Glu
225					230					235				240	
Glu	Ser	Ser	Gly	Phe	Val	Gly	Lys	Thr	Ile	Gln	Glu	Leu	Gly	Ile	Pro
			245						250					255	
Gln	Arg	Tyr	His	Val	Thr	Ile	Leu	Glu	Val	Arg	Arg	Arg	Ser	Val	Ser
			260					265					270		
Ser	Arg	His	Phe	Phe	Lys	Thr	Lys	Lys	Gln	Glu	Met	Ala	Glu	Ala	Gly
		275					280					285			
Thr	Leu	Ile	Glu	Ala	Glu	Asp	Ile	Leu	Tyr	Val	Leu	Gly	Glu	Phe	Glu
	290					295					300				
Asn	Val	Lys	Arg	Phe	Ala	Gly	Glu	Asn	Arg	Leu	Ser	Leu	Leu	Asp	Thr
305					310					315				320	
His	Lys	Thr	Glu	Gly	Ser	Leu	His	Asp	Thr	Asp	Glu	Gly	Phe	Asp	Phe
			325						330					335	
Gln	Glu	Ile	Gly	Ile	Ala	Glu	Ile	Leu	Leu	Leu	Pro	Thr	Ala	Asn	Leu
			340					345					350		
Ile	Asn	Lys	Pro	Val	Lys	Ala	Ser	Gly	Phe	Arg	Glu	Asn	Tyr	Ser	Ile
	355						360					365			
Asn	Ile	Leu	Gly	Ile	Gln	Arg	Lys	Arg	Asp	Tyr	Leu	Leu	Lys	Asn	Leu
	370					375					380				
Lys	Asp	Glu	Lys	Met	His	Ser	Gly	Asp	Ile	Leu	Leu	Val	Gln	Gly	Ser
385					390					395				400	
Trp	Ala	Asn	Ile	Ala	Arg	Leu	Gly	Glu	Asp	Gln	Ser	Gln	Trp	Val	Val

405 410 415  
 Leu Gly Gln Pro Leu Ala Glu Ala Ala Lys Val Thr Leu Asn His Lys  
 420 425 430  
 Ala Pro Val Ala Ala Leu Ile Met Leu Gly Met Ile Val Thr Met Met  
 435 440 445  
 Phe Asp Phe Ile Pro Val Ala Pro Val Thr Ala Val Ile Ile Ala Ala  
 450 455 460  
 Leu Leu Met Val Leu Thr Gly Cys Phe Arg Asn Val Glu Glu Ala Tyr  
 465 470 475 480  
 Lys Thr Ile Asn Trp Glu Ser Ile Val Leu Ile Ala Gly Met Leu Pro  
 485 490 495  
 Met Ser Leu Ala Leu Glu Lys Thr Gly Ala Ser Glu Val Val Ser Gln  
 500 505 510  
 Ser Leu Val Asn Gly Leu Gly Ala Tyr Gly Pro Phe Ala Leu Leu Ala  
 515 520 525  
 Gly Ile Tyr Phe Thr Thr Ser Leu Met Thr Met Phe Ile Ser Asn Thr  
 530 535 540  
 Ala Thr Ala Val Leu Leu Ala Pro Ile Ala Leu His Ser Ala Val Gln  
 545 550 555 560  
 Leu Gly Leu Ser Pro Tyr Pro Phe Leu Phe Ala Val Thr Val Ala Ala  
 565 570 575  
 Ser Met Cys Phe Ala Ser Pro Phe Ser Thr Pro Pro Asn Ala Leu Val  
 580 585 590  
 Met Pro Ala Gly Arg Tyr Thr Phe Met Asp Tyr Val Lys Val Gly Leu  
 595 600 605  
 Pro Leu Gln Ile Ile Met Gly Val Val Met Val Phe Val Leu Pro Leu  
 610 615 620  
 Leu Phe Pro Phe  
 625

&lt;210&gt; 7014

&lt;211&gt; 355

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7014

Gln Lys Gly Leu Lys Asn Ile Glu Thr Met Lys Lys Glu Asn Asp Glu  
 1 5 10 15  
 Ile Thr Asp Leu Phe Arg Ser Arg Leu Gly Asn Ala Glu Met Thr Val  
 20 25 30  
 Arg Asp Gly Phe Trp Glu Glu Leu Asn Ser Glu Met Met Val Arg Ser  
 35 40 45  
 His His Arg Lys Val Val Phe Phe Arg Val Ala Ala Ala Ala Ser Val  
 50 55 60  
 Leu Leu Val Leu Ala Ala Ser Ser Ala Ala Phe Trp Phe Phe Ser Pro  
 65 70 75 80  
 Lys Ala Glu Ile Glu Glu Ala Phe Thr Gln Val Ala Val Val Ser Gly  
 85 90 95  
 Asn Thr Thr His Leu Asp Gly Asp Val Val Lys Gln Asp Phe Thr Pro  
 100 105 110  
 Met Arg Ser Glu Pro Val Leu Gly Lys Pro Ala Pro Lys Arg Ser Gly  
 115 120 125  
 Val Leu Ala Gln Ser Ser Gly Glu Glu Asp Asp Ser Val Ser Val Thr  
 130 135 140  
 Val Ser Met Ser Phe Ser Ser Ser Thr Thr Arg Arg Arg Gln  
 145 150 155 160  
 Asn Asn His Pro Asp Lys Ser Tyr Trp Gln Ala Gly Gly Glu Gly Gly  
 165 170 175  
 Ala Leu Ala Ser Ser Ala Asp Gly Pro Arg Pro Asp Asp His Thr Val

Val	Ala	Asp	Lys	Ser	Arg	Thr	Trp	Ala	Val	Lys	Ala	Ala	Val	Gly	Thr
180	195						200					205			
Ala	Leu	Pro	Ala	Ala	Asn	Gly	Lys	Tyr	Lys	Met	Pro	Val	Thr	Ala	Gly
210						215					220				
Leu	Thr	Val	Glu	Lys	Lys	Ile	Asn	Lys	His	Leu	Ala	Val	Glu	Thr	Gly
225					230					235					240
Leu	Leu	Tyr	Ser	Asn	Leu	Arg	Ala	Glu	Gln	Asn	Leu	His	Tyr	Leu	Gly
			245						250					255	
Ile	Pro	Val	Lys	Leu	Asn	Met	Thr	Leu	Ala	Glu	Thr	Pro	Lys	Phe	Asp
			260						265					270	
Leu	Tyr	Ala	Ser	Val	Gly	Gly	Val	Ala	Asp	Lys	Cys	Ile	Ala	Gly	Ala
		275					280					285			
Pro	Asp	Asn	Ser	Phe	Lys	Asn	Glu	Pro	Val	Gln	Leu	Ala	Leu	Thr	Ala
	290					295					300				
Gly	Val	Gly	Met	Asn	Tyr	Lys	Asn	Asn	Asp	Lys	Leu	Ala	Leu	Phe	Ala
305					310					315					320
Glu	Pro	Gly	Val	Thr	His	His	Phe	Lys	Thr	Asn	Ser	Lys	Leu	Glu	Thr
				325					330					335	
Val	Arg	Ser	Ala	Lys	Pro	Thr	Asn	Phe	Asn	Leu	Asp	Cys	Gly	Leu	Arg
			340					345					350		
Met	Thr	Tyr													
		355													

&lt;210&gt; 7015

&lt;211&gt; 345

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7015

Cys	Arg	Gln	Ser	Arg	His	Arg	Ala	Met	Met	Lys	Arg	His	Asn	Ile	Leu
1				5					10					15	
Thr	Val	Leu	Ala	Val	Leu	Leu	Leu	Thr	Phe	Ala	Ala	Cys	Asp	Lys	Asn
		20						25					30		
Ser	Ala	Pro	Gly	Phe	Ser	Phe	Thr	Thr	Asp	Ser	Ile	Leu	Thr	Leu	Thr
		35					40					45			
Phe	Asp	Lys	Glu	Leu	Asp	Ala	Phe	Val	Gly	Val	Gly	Thr	Gln	Asn	
	50					55				60					
Tyr	Asn	Pro	Val	Gly	Met	Arg	Arg	Ser	Gly	Asp	Thr	Leu	Phe	Ile	Ala
65					70					75					80
Asn	Arg	Ala	Glu	Gly	Ser	Asp	Gly	Val	Trp	Val	Val	Arg	Ala	Ser	Thr
			85						90					95	
Gly	Glu	Leu	Leu	Tyr	Ser	Leu	Thr	Gly	Trp	Thr	Tyr	Asn	Gly	Lys	Asn
		100						105					110		
Glu	Lys	Phe	Asp	Asn	Gln	Val	Met	Asp	Val	Ala	Val	Ser	Ser	Asp	Tyr
		115					120					125			
Ile	Phe	Val	Val	Asn	Arg	Ser	Ser	Arg	Ile	Asp	Leu	Phe	Arg	Arg	Asn
	130					135					140				
Asp	Tyr	Ser	Tyr	Val	Thr	Thr	Ile	Gly	Arg	Thr	Gly	Trp	Gln	Ser	Ser
145					150					155					160
Ser	Leu	Leu	Gln	Cys	Glu	Ala	Ala	Glu	Val	Ala	Gly	Asp	Lys	Leu	Phe
			165					170						175	
Ile	Arg	Asp	Lys	Gln	Lys	Ile	Lys	Val	Gln	Ile	Ser	Asp	Cys	Thr	
		180						185					190		
Pro	Glu	Asn	Arg	Phe	Lys	Val	Pro	Val	Phe	Ala	Gln	Asn	Thr	Asp	Ser
		195					200						205		
Thr	Ser	Ser	Asn	Asn	Gly	Phe	Asn	Leu	Glu	Ser	Val	Ala	Arg	His	Glu
	210					215						220			
Gly	Leu	Ile	Tyr	Val	Ser	Asp	Tyr	Glu	Thr	Ser	Arg	Ile	Leu	Val	Ile